S. HRG. 100-820

OSHA STANDARDS AND THE L'AMBIANCE PLAZA, CONNECTICUT, BUILDING COLLAPSE

HEARING

BEFORE THE

COMMITTEE ON LABOR AND HUMAN RESOURCES UNITED STATES SENATE

ONE HUNDREDTH CONGRESS

SECOND SESSION

ON

EXAMINATION OF THE ENFORCEMENT OF SAFETY AND HEALTH STANDARDS OF THE OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION, FOCUSING ON THE L'AMBIANCE PLAZA, CONNECTICUT, BUILDING COLLAPSE.

APRIL 26, 1988

Printed for the use of the Committee on Labor and Human Resources

U.S. GOVERNMENT PRINTING OFFICE

89-240 WASHINGTON : 1988

For sale by the Superintendent of Documents, Congressional Sales Office
U.S. Government Printing Office, Washington, DC 20402

S541-5

COMMITTEE ON LABOR AND HUMAN RESOURCES

EDWARD M. KENNEDY, Massachusetts, *Chairman*

CLAIBORNE PELL, Rhode Island
HOWARD M. METZENBAUM, Ohio
SPARK M. MATSUNAGA, Hawaii
CHRISTOPHER J. DODD, Connecticut
PAUL SIMON, Illinois
TOM HARKIN, Iowa
BROCK ADAMS, Washington
BARBARA A. MIKULSKI, Maryland

ORRIN G. HATCH, Utah
ROBERT T. STAFFORD, Vermont
DAN QUAYLE, Indiana
STROM THURMOND, South Carolina
LOWELL P. WEICKER, Jr., Connecticut
THAD COCHRAN, Mississippi
GORDON J. HUMPHREY, New Hampshire

THOMAS M. ROLLINS, *Staff Director and Chief Counsel*
KEVIN S. MCGUINESS, *Minority Staff Director and Chief Counsel*

CONTENTS

STATEMENTS

TUESDAY, APRIL 26, 1988

	Page
Daddona, Nancy, Prospect, CT, and Mary Beth Adonna, Oakville, CT, accompanied by Charles T. Alfano, Esquire, Suffield, CT	79
Georgine, Robert A., president, Building & Construction Trades Department, AFL-CIO, Washington, DC, accompanied by Juel Drake, president, International Association of Bridge, Structural, and Ornamental Iron Workers; and Joseph F. Egan, Jr., business agent, International Association of Bridge, Structural and Ornamental Iron Workers, AFL-CIO, Local Union 424, New Haven, CT	22
Prepared statement of Mr. Georgine	25
Lyons, Dr. John, Director, National Engineering Laboratory, National Bureau of Standards, Gaithersburg, MD, accompanied by Dr. Charles G. Culver, Chief, Structures Division, Center for Building Technology, National Bureau of Standards, and Dr. Richard N. Wright, Director, Center for Building Technology	56
Prepared statement of Dr. Lyons (with an attachment)	59
Pendergrass, John A., Assistant Secretary of Labor for Occupational Safety and Health Administration, U.S. Department of Labor, Washington, DC	82
Prepared statement (with an attachment)	85
Shays, Hon. Christopher, Member, U.S. House of Representatives, Fourth District; and Hon. Thomas W. Bucci, mayor, City of Bridgeport, CT	10
Prepared statement of Mr. Shays	13
Simon, Hon. Paul, a U.S. Senator from the State of Illinois, prepared statement	8
Texstar Construction Corp., prepared statement (with attachments)	153
Weicker, Hon. Lowell P., Jr., a U.S. Senator from the State of Connecticut, prepared statement	4

ADDITIONAL MATERIAL

Articles, publications, etc.:	
OSHA's chief denies "Retreat from Safety", Herman Wolf Associates, from the New York Times, April 21, 1988	21
Questions and answers:	
Responses of Mr. Pendergrass to questions submitted by Senator Weicker	134

OSHA STANDARDS AND THE L'AMBIANCE PLAZA, CONNECTICUT, BUILDING COLLAPSE

TUESDAY, APRIL 26, 1988

U.S. SENATE,
COMMITTEE ON LABOR AND HUMAN RESOURCES,
Washington, DC.

The committee met, pursuant to notice, at 3:02 p.m., in room SD-430, Dirksen Senate Office Building, Senator Christopher J. Dodd presiding.

Present: Senators Dodd and Weicker.

OPENING STATEMENT OF SENATOR DODD

Senator DODD. The committee will come to order.

I would like to welcome all of you here this afternoon to the Committee on Labor and Human Resources for our hearing today on OSHA and the tragedy of L'Ambiance Plaza.

I would like to welcome all of our witnesses who are here today.

Today's hearing will focus on OSHA and the construction industry in the context of the L'Ambiance Plaza building collapse in Bridgeport, CT.

This past Saturday marked the 1-year anniversary of one of the most tragic events in recent memory—the collapse of the L'Ambiance Plaza residential development in Bridgeport, CT, on April 23, 1987.

As we all know, 28 workers were killed in that disaster. Twelve other workers were seriously injured. The accident ranks as the second-worst in terms of lives lost in OSHA history.

Many of us here today can vividly remember this horrifying accident and the heroic effort by union volunteers who worked around-the-clock for over a week to try and rescue their fellow workers.

Of course, nothing that is said here today can bring back those 28 men. It is our hope that what we can learn during this hearing this afternoon can prevent another L'Ambiance Plaza tragedy from occurring in the future.

The L'Ambiance Plaza tragedy has raised questions about our ability to follow the mandate in the 1970 Occupational Safety and Health Act and assure safe and healthful working conditions in one of our most basic industries, the construction industry.

It is unfortunate that it took a tragedy of the magnitude of L'Ambiance Plaza to focus attention on the deficiencies in Federal safety programs. And clearly, there are serious problems with our Federal workplace safety programs.

OSHA is the agency charged with protecting the health and safety of tens of millions of workers. Yet according to its own consultants, the agency is understaffed and confused about its mission. OSHA moves painfully slow when it decides to act. It has slipped into regulatory gridlock, and that has stalled development of its rules almost totally.

Many have charged that OSHA is an agency adrift and overwhelmed by its own task. Although the agency's budget is growing, the number of workplace visits it makes is declining. At the same time, deaths and injuries in the workplace are increasing.

The Labor Department's own study concluded last year that there are "systemic organizational weaknesses" in the national OSHA enforcement program. In short, OSHA is falling down on the job.

This examination of the status of Federal legislation, administration and enforcement of occupational safety and health in the construction industry is long overdue.

We must improve OSHA's ability to meet its obligations to assure safe and healthful workplaces for working men and women in the construction industry.

I, along with my colleague, and cochairman of this hearing, Senator Weicker, look forward to our witnesses today and their testimony.

I am going to impose a standard here, given the number of people we have who are going to be heard, so this little machine in front of me here will blink a yellow light and then a red light at the conclusion of 5 minutes. So that we would ask if you have prepared testimony, that you try to abbreviate. Rest assured that the full text of your prepared remarks will be included in the record.

Again, I want to thank our witnesses for being here today.

Let me turn to my colleague from Connecticut and the cochair of these hearings, Senator Weicker.

OPENING STATEMENT OF SENATOR WEICKER

Senator WEICKER. Thank you very much, Senator Dodd.

I would like the full text of my remarks to be placed in the record.

Senator DODD. Without objection.

Senator WEICKER. I remember about 5 years ago, as I think my friends from labor also remember, when everybody joked about the mission of OSHA. They joked to the extent that this was an agency whose responsibility it was to find out whether there were toilets in the workplace, et cetera. They were jokes.

On the other hand, what occurred at L'Ambiance was a tragedy, and a tragedy that clearly focuses on the priority that safety in the workplace has in this Nation.

Last Saturday, I had the privilege to attend the memorial service at Saint Augustine's in Bridgeport, and universally among all those there was the fact that we are here to make sure that such a tragedy never happens again.

I felt a certain irony as I sat there, because only one week earlier in the U.S. Senate, a bill on toxic substances in the workplace had

been killed by filibuster—those substances that kill silently just as surely as the collapse of that building killed those 28 men.

So I had to question whether or not indeed these matters were of sufficient importance to have a nation act upon them.

The fact is that somebody thought that we could go ahead and guarantee safety in the workplace without the necessary money to do so, which translates into the necessary inspectors, which translates into the necessary regulations.

Remember how we were going to all accomplish this by volunteerism, how the private sector was going to do it for us, by eliminating waste, fraud and abuse? But no worry. The agency would continue to survive. Well, it was there, but it was there in name only. While people joked about toilets in the workplace, construction practices went unnoticed.

So I hope from this hearing, number one, that not only will it focus on the job that OSHA needs to do now, but it will renew in the Congress and in the Nation the importance—because this place doesn't do anything that the Nation doesn't want—the importance of safety in the workplace. And I will be convinced that that is an important subject when we so legislate it and when we so appropriate it.

Thank you very much, Mr. Chairman. And I ask that my full statement be made a part of the record.

Senator DODD. Thank you, Senator Weicker. The full text of your statement as well as a statement by Senator Simon will be entered in the record at this point.

[The prepared statements of Senator Weicker and Senator Simon follow:]

OPENING STATEMENT

SENATOR LOWELL WEICKER, JR.

LABOR AND HUMAN RESOURCES COMMITTEE HEARING

L'AMBIANCE PLAZA CONSTRUCTION DISASTER

APRIL 26, 1988

GOOD AFTERNOON. ON SATURDAY I TOOK PART IN A MEMORIAL SERVICE MARKING THE FIRST ANNIVERSARY OF THE COLLAPSE OF THE L'AMBIANCE PLAZA APARTMENT COMPLEX IN BRIDGEPORT, CONNECTICUT. A COLD RAIN FELL AS THE NAMES OF 28 MEN -- SONS AND FATHERS, HUSBANDS, BROTHERS AND FRIENDS -- WERE READ. PEOPLE WHO CARED BROUGHT BOUQUETS AND WREATHS AND OFFERINGS OF WINE AND BREAD AND STOOD TOGETHER IN THE CHILL OF THE AFTERNOON. IT WAS A SORROWFUL OCCASION BUT ALSO ONE OF SOLIDARITY.

THIS SPECIAL HEARING HAS BEEN CONVENED TODAY TO HONOR THOSE WHO WERE KILLED OR HURT IN A DIFFERENT WAY, BY TAKING A COLD, HARD LOOK AT THE CIRCUMSTANCES SURROUNDING THE WORST CONSTRUCTION ACCIDENT IN NEW ENGLAND'S HISTORY. IN THE COURSE OF TAKING EXPERT TESTIMONY FROM LABOR AND GOVERNMENT AND FROM TWO BRAVE WOMEN WHO LOST THEIR HUSBANDS AT L'AMBIANCE PLAZA, WE HOPE TO BETTER UNDERSTAND WHAT CAUSED THE TRAGEDY, HOW WE CAN BEST HELP THOSE INJURED AND THE FAMILIES OF THOSE WHO DIED, AND WHAT CAN BE DONE TO KEEP A DISASTER OF THIS KIND FROM EVER HAPPENING AGAIN.

WE ARE NOT HERE TO POINT FINGERS BUT RATHER TO GET AT THE FACTS AS TO WHOM AND WHAT WAS AT FAULT. SOME OF THESE FACTS ARE ALREADY WELL KNOWN TO US, YET CORRECTIVE ACTION SEEMS NOT TO HAVE BEEN TAKEN. ONE EXCEPTION, CERTAINLY, IS THE VOTE BY THE CONNECTICUT STATE LEGISLATURE TO OUTLAW FURTHER USE OF THE LIFT-SLAB METHOD OF CONSTRUCTION. ASSISTANT SECRETARY PENDERGRASS WILL BE TESTIFYING AS TO THE STEPS THE OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION (OSHA) HAS TAKEN TO BEEF UP ITS INPSECTION AND ENFORCEMENT PRACTICES. NEEDLESS TO SAY, THE COMMITTEE WILL BE LISTENING CLOSELY TO WHAT HE HAS TO SAY AND LOOKING CLOSELY AT OSHA'S ACTIONS.

SOME HAVE POINTED TO THE INCREASE IN THE NUMBERS OF CONSTRUCTION INSPECTIONS -- A 35 PERCENT INCREASE SINCE FISCAL 1980 -- AS EVIDENCE THAT ENOUGH IS BEING DONE. FIFTY-EIGHT PERCENT OF ALL OF OSHA'S INSPECTIONS ARE, IN FACT, IN THE CONSTRUCTION INDUSTRY. YET, AS AFL-CIO VICE PRESIDENT AND STEELWORKERS LEADER LYNN WILLIAMS TESTIFIED LAST WEEK BEFORE THIS COMMITTEE, "THE NUMBER OF INSPECTIONS IN THE CONSTRUCTION INDUSTRY DOESN'T TELL THE REAL STORY." ACCORDING TO WILLIAMS, OSHA LACKS ANY SYSTEM FOR TARGETING CONSTRUCTION SITES SO THAT INSPECTIONS OCCUR WHEN MEANINGFUL WORK IS BEING DONE. QUESTIONS HAVE ALSO BEEN RAISED CONCERNING THE EXPERIENCE AND EXPERTISE OF OSHA'S INSPECTORS. IN TERMS OF NUMBERS ALONE, THEIR RANKS ARE THIN. ROBERT GEORGINE OF THE BUILDING TRADES DEPARTMENT, AFL-CIO, WILL HAVE MORE TO SAY ON THESE POINTS, I'M SURE.

A RECENT REPORT ON OSHA INSPECTIONS BY THE CONGRESSIONAL RESEARCH SERVICE CONTRASTED THE WORK OF THE MINE SAFETY AND HEALTH ADMINISTRATION (MSHA) WITH THAT OF OSHA AND THE DIFFERENCES ARE STARTLING TO SAY THE LEAST. WORKPLACES COVERED BY MSHA ARE INSPECTED FROM TWO TO FOUR TIMES A YEAR, DEPENDING ON WHETHER THEY ARE ABOVE OR BELOW GROUND, WHILE THE PROBABILITY OF EVEN SPECIFICALLY TARGETED WORKERS HAVING THEIR WORKPLACES INSPECTED BY OSHA IS, AT BEST, ABOUT ONCE EVERY TWO TO FIVE YEARS. THE DISCREPANCIES IN EXPENDITURES, ACCORDING TO THE CRS REPORT, ARE EQUALLY DRAMATIC. MSHA AVERAGES $489 PER WORKER, OSHA JUST $3.60.

I AM NOT GOING TO MAKE ANY PREDICTIONS AS TO THE CONCLUSIONS WE WILL REACH TODAY. IT MAY BE THAT OSHA LACKS A FIRM COMMITMENT TO AGGRESSIVE INSPECTION AND ENFORCEMENT, OR THE RESOURCES NECESSARY TO DO THE JOB, OR BOTH. PERHAPS CONGRESS NEEDS TO TAKE ANOTHER LOOK AT THE OSHA BUDGET, AT ITS REGULATIONS, AND EVEN CONSIDER AMENDING ITS AUTHORIZING LEGISLATION.

ONE THING I CAN PREDICT WITH CERTAINTY IS THAT IN THE VERY NEAR FUTURE I WILL PUSH FOR FULL COMMITTEE CONSIDERATION OF S.2086, THE BILL I PUT TOGETHER WITH THE HELP OF LABOR TO ESTABLISH A TRUST FUND USING CIVIL PENALTIES OSHA COLLECTS TO COMPENSATE VICTIMS OF THE COLLAPSE OF L'AMBIANCE PLAZA. WE HAVE AN OBLIGATION TO HELP THOSE WHO WERE HURT AS A RESULT OF THIS ACCIDENT, THOSE WHO NOT ONLY LOST FAMILY MEMBERS BUT A MAJOR SOURCE OF FINANCIAL SUPPORT AS WELL.

TO CONCLUDE MY OPENING REMARKS TODAY, I WANT TO MENTION THE COURAGEOUS REPORTING ABOUT L'AMBIANCE PLAZA PERFORMED BY MEMBERS OF THE PRESS IN CONNECTICUT, INCLUDING THAT OF THE HARTFORD COURANT. THEY HAVE DONE MUCH TO PUT THE ACCIDENT IN CONTEXT AND KEEP THE ISSUES IT RAISES ALIVE. ONE ARTICLE RECALLED THE INVESTIGATION OF ANOTHER ACCIDENT THAT TOOK PLACE TEN YEARS AGO TOMORROW AT WILLOW ISLAND, WEST VIRGINIA, KILLING 51 PEOPLE. THE REPORT WRITTEN AFTERWARDS INCLUDED THIS QUESTION: "WHERE ELSE IS THERE ANOTHER TIME BOMB WAITING TO GO OFF IN SOME OTHER INDUSTRY THAT IS NOT CHECKED...BECAUSE NO ACCIDENT OF A MAJOR PROPORTION HAS EVER HAPPENED TO CALL ATTENTION TO THAT INDUSTRY?" AS THE COURANT PUT IT, L'AMBIANCE PLAZA WAS THE ANSWER TO THAT QUESTION.

THIS COUNTRY MUST NOT TOLERATE ANY MORE WILLOW ISLANDS OR L'AMBIANCE PLAZAS OR ANY OF THE THOUSANDS OF OTHER ACCIDENTS THAT CLAIM LIVES AND FUTURES AND COULD BE AVOIDED IF INDUSTRY AND GOVERNMENT ACT SWIFTLY AND RESPONSIBLY. THE QUESTIONS WE ASK TODAY AND THE ANSWERS WE SEEK MUST BE USED TO DEFUSE THE TIME BOMBS OF THE FUTURE.

STATEMENT OF U.S. SENATOR PAUL SIMON

SENATE COMMITTEE ON LABOR AND HUMAN RESOURCES

"L'AMBIANCE PLAZA BUILDING COLLAPSE"

APRIL 26, 1988

Mr. Chairman and Senator Weicker, I thank you for holding this hearing today, investigating the collapse of the L'Ambiance Plaza Apartment buildings in Bridgeport, Connecticut. I apologize for my not being in attendance; however, my Illinois colleagues and I were attending Cong. Melvin Price's memorial service in Illinois.

Mr. Chairman, there is no question that something went wrong here--someone abrogated his or her duties in seeing to it that these workers had a safe place in which to work. There is really no reason that the lives could not have been saved of the 28 men who died or the injuries spared from the 12 who were hurt--if only the construction company had been aware; if only the Occupational Safety and Health Administration had caught the potential flaws; if only the complaints of some of the workers had been heeded.

As I'm sure you know, Mr. Chairman, Illinois has not been without its tragedies in the construction industry. I, too, am concerned about health and safety standards in construction.

I will read with interest the testimony of those who appeared before this committee today. I will look carefully at the proposal put forward by the Building and Construction Trades Department of the AFL-CIO for a separate division in the Department of Labor for construction industry safety and health. I will work with my colleagues to solve the inherent problems at OSHA about which we have heard during these last four committee hearings.

My heart goes out to the survivors of the 28 men who died and the families of those who were injured. I commend the two widows for their difficult testimony. And I thank you, Mr. Chairman and you, Senator Weicker, for your work in drawing attention to these problems.

Senator DODD. Our first two witnesses are our colleague from the House of Representatives, the Congressman from the Fourth Congressional District in Connecticut, Christopher Shays, and the mayor of Bridgeport, CT, Tom Bucci. Both of you are more than welcome to be in front of this committee.

I know that you, Congressman Shays, have been working very diligently on this issue, are one of the best-informed Members of Congress about this particular tragedy and also some of the recommendations that need to be made to improve OSHA. We welcome you here this afternoon and will be glad to accept your testimony, and then we will go right to you, Mayor.

STATEMENTS OF HON. CHRISTOPHER SHAYS, MEMBER, U.S. HOUSE OF REPRESENTATIVES, FOURTH DISTRICT; AND HON. THOMAS W. BUCCI, MAYOR, CITY OF BRIDGEPORT, CT

Mr. SHAYS. Thank you very much.

Senator Dodd and Senator Weicker, thank you for inviting me and Mayor Bucci to testify this afternoon at your oversight hearing on the accident at the L'Ambiance Plaza construction site in Bridgeport.

In my first 8 months as a Congressman representing Connecticut's Fourth District, which includes the city of Bridgeport, I have had the opportunity to be involved in several hearings concerning the Occupational Safety and Health Administration [OSHA] and its role in the L'Ambiance Plaza collapse.

First, as a member of the Connecticut delegation, I was invited by the House Education and Labor Subcommittee on Health and Safety to participate in a series of hearings this winter on the issue of construction safety, prompted in part by the L'Ambiance collapse. Then, in February, the House Government Operations Subcommittee on Employment and Housing, of which I am a member, held a hearing on the issue of OSHA's reluctance to impose criminal sanctions on employers who willfully violate codes designed to protect workers' health and safety.

Today I would like to share with you my impressions of OSHA and the way it has handled events surrounding the L'Ambiance collapse.

Last Saturday marked the first anniversary of the day 28 construction workers lost their lives when the L'Ambiance Plaza, a partially built, 13-story apartment complex, collapsed. This catastrophe—the worst human toll from a construction accident in a decade—resulted from wanton disregard for human life by several companies that engaged in faulty engineering and sloppy construction practices.

When the Connecticut delegation was briefed by OSHA officials on the cause of the building collapse, it became clear to all of us that OSHA should have looked inward at its own failings as well.

The failure of OSHA to properly monitor and regulate such violations is inexcusable. After listening to extensive testimony at four congressional hearings, I believe OSHA has failed to properly carry out its mandate to protect workers' health and safety in several important areas of responsibility.

First, it is imperative that OSHA review and change its reporting requirements. Current OSHA regulations stipulate that a construction accident must be reported only when a fatality or five or more hospitalizations occur. I find it incomprehensible that an accident of the magnitude of the L'Ambiance would have gone unreported if fewer than five people were hospitalized or no life was lost.

OSHA's investigation into the L'Ambiance collapse revealed a near disaster involving the same lift-slab contractor at the Metro Center construction site in Stamford, CT 1 year earlier. This accident should have served as a warning of impending tragedy, but it was never reported because OSHA had no requirement that it be reported.

The Metro Center accident occurred when a shearhead failure caused part of a concrete floor to sag some 15 inches in an accident nearly identical to the L'Ambiance incident. Not only was the same contractor involved in both accidents, but the same faulty building techniques and practices were responsible. OSHA officials expressed astonishment that more devastating damage did not take place at the Metro Center site.

It is clear an accident of this severity warranted a thorough investigation even though no lives were lost and only one worker was injured. Had OSHA officials been notified of what happened at Metro Center, they could have taken steps to prevent the tragedy at L'Ambiance.

Second, from the testimony I heard from representatives of labor and the construction industry, it is obvious that OSHA is severely understaffed and underfunded. In the State of Connecticut, there are 10 OSHA inspectors. However, of those 10, only two specialize in construction. Given the inherent hazards in the construction industry, I find this statistic unacceptable. Regrettably, OSHA officials testified before the Health and Safety Subcommittee that they have all the resources they need.

Third, besides requiring more resources, OSHA may need to reorganize itself. At the very least, a separate division should be established within OSHA solely to monitor and regulate the construction industry. Given the unique dangers of this industry, it may even be advisable to create an entirely new agency under the Department of Labor.

Finally, the assessment of high financial penalties, such as the record $5.1 million in the L'Ambiance Plaza disaster, cries out for criminal sanctions as well. Employers who knowingly violate safety codes should be held accountable for their actions. For too long, individuals within a corporation have been allowed to hide behind their corporate shield. The company is fined; the major decisionmakers within the company walk away scot-free. It seems so obvious to me that an employer who knowingly disregards safety regulations resulting in the serious injury or death of an employee should be subject to criminal prosecution. Murder in the workplace cannot be tolerated.

Recently, OSHA referred the L'Ambiance case to the Department of Justice for criminal prosecution. The Justice Department must now decide whether to prosecute. Twenty-eight workers lost their lives, fines were imposed, and yet no one has been prosecuted.

But even if individuals are prosecuted, under current law, the penalties can only be a maximum of $10,000 and 6 months in jail.

According to testimony before the Employment and Housing Subcommittee, OSHA has referred only 38 cases since its inception for criminal prosecution. Of these 38 cases, the Justice Department has pursued 14. This record is pathetic. It is my understanding that no one has spent one day in jail for violating Federal OSHA law.

Because of this dismal record, States such as New York, Illinois and California have had to take the initiative. In cases where OSHA has imposed a minimal monetary fine for a "serious violation" of safety codes, State prosecutors have successfully pursued homicide convictions.

Regrettably, State prosecutors have recently pursued cases and won criminal convictions only to have them challenged on the grounds that Federal law preempts State law.

OSHA should immediately clarify the right of State prosecutors to impose criminal sanctions against employers who knowingly and recklessly disregard worker safety. If necessary, it should recommend to Congress that the law be amended to make absolutely clear that the Federal statute does not preempt the States. In addition, we must have a tougher and more aggressive Federal statute. The penalties are simply not strong enough.

It has been 1 year since the L'Ambiance collapse. Tragically, we have seen little movement to change any of the factors that contributed to the accident. OSHA has not reviewed or modified its reporting requirements. OSHA is undermanned and underfunded, yet it has not requested additional resources. OSHA has made no effort to establish a separate division to oversee construction in spite of the unique dangers of the industry. OSHA refuses to recommend any legislative or regulatory changes imposing tougher criminal sanctions or addressing the preemption issue.

Twenty-eight people lost their lives. The victims' families must not only live with the loss of their loved ones but also with the reality that their Government has not responded to their tragedy. If OSHA is not going to take action, it is time Congress takes action.

Thank you.

Senator DODD. Thank you very much, Congressman.

[The prepared statement of Mr. Shays follows:]

STATEMENT OF CONGRESSMAN CHRISTOPHER SHAYS
BEFORE THE SENATE COMMITTEE ON LABOR AND HUMAN RESOURCES
APRIL 26, 1988

Mr. Chairman and distinguished Members of the Committee, thank you for inviting me to testify this afternoon at your oversight hearing on the accident at the L'Ambiance Plaza construction site in Bridgeport, Connecticut.

In my first eight months as a Congressman representing Connecticut's Fourth District, which includes the city of Bridgeport, I have had the opportunity to be involved in several hearings concerning the Occupational Safety and Health Administration (OSHA) and its role in the L'Ambiance Plaza collapse. First, as a member of the Connecticut delegation, I was invited by the House Education and Labor's Subcommittee on Health and Safety to participate in a series of hearings this winter on the issue of construction safety, prompted in part by the L'Ambiance collapse. Then, in February, the House Government Operations Subcommittee's on Employment and Housing, of which I am a member, held a hearing on the issue

of OSHA's reluctance to impose criminal sanctions on employers who willfully violate codes designed to protect workers' health and safety. Today I would like to share with you my impressions of OSHA and the way it has handled events surrounding the L'Ambiance Plaza collapse.

Last Saturday marked the first anniversary of the day 28 construction workers lost their lives when the L'Ambiance Plaza, a partially built 13-story apartment complex, collapsed. This catastrophe -- the worst human toll from a construction accident in a decade -- resulted from wanton disregard for human life by several companies that engaged in faulty engineering and sloppy construction practices. When the Connecticut delegation was briefed by OSHA officials on the cause of the building collapse, it became clear to all of us that OSHA should have looked inward at its own failings as well.

The failure of OSHA to properly monitor and regulate such violations is also inexusable. After listening to extensive testimony at four congressional hearings, I believe OSHA has failed to properly carry out its mandate to protect workers' health and safety in several important areas of responsibility.

First, it is imperative that OSHA review and change its reporting requirements. Current OSHA regulations stipulate that a construction accident must be reported only when a fatality or five or more hospitalizations occur. I find it

incomprehensible that an accident of the magnitude of L'Ambiance would have gone unreported if fewer than five people were hospitalized or no life was lost.

OSHA's investigation into the L'Ambiance collapse revealed a near disaster involving the same lift-slab contractor at the Metro Center construction site in Stamford, Connecticut, one year earlier. This accident should have served as a warning of impending tragedy. But it was never reported because OSHA had no requirement that it be reported.

The Metro Center accident occurred when a shearhead failure caused part of a concrete floor to sag some 15 inches in an accident nearly identical to the L'Ambiance incident. Not only was the same contractor involved in both accidents, but the same faulty building techniques and practices were responsible. OSHA officials expressed astonishment that more devastating damage did not take place at the Metro Center site.

It is clear an accident of this severity warranted a thorough investigation even though no lives were lost and only one worker was injured. Had OSHA officials been notified of what happened at Metro Center, they could have taken steps to prevent the tragedy at L'Ambiance.

Second, from the testimony I heard from representatives of labor and the construction industry, it is obvious that OSHA is severely understaffed and underfunded. In the state of Connecticut, there are ten OSHA inspectors. However, of those

ten, only two specialize in construction. Given the inherent hazards in the construction industry, I find this statistic unacceptable. Regrettably, OSHA officials testified before the Health and Safety Subcommittee that they have all the resources they need.

Third, besides requiring more resources, OSHA may need to reorganize itself. At the very least, a separate division should be established within OSHA solely to monitor and regulate the construction industry. Given the unique dangers of this industry, it may even be advisable to create an entirely new agency under the Department of Labor.

Finally, the assessment of high financial penalties, such as the record $5.1 million in the L'Ambiance Plaza disaster, cries out for criminal sanctions as well. Employers who knowingly violate safety codes should be held accountable for their actions. For too long, individuals within a corporation have been allowed to hide behind their corporate shield. The company is fined; the major decision makers within the company walk away scot free. It seems so obvious to me that an employer who knowingly disregards safety regulations resulting in the serious injury or death of an employee should be subject to criminal prosecution. Murder in the workplace cannot be tolerated.

Recently OSHA referred the L'Ambiance case to the Department of Justice for criminal prosecution. The Justice Department must now decide whether to prosecute. Twenty-eight workers

lost their lives, fines were imposed, and yet no one has been prosecuted. But even if individuals are prosecuted, under current law the penalties can only be a maximum of $10,000 and six months in jail.

According to testimony before the Employment and Housing Subcommittee, OSHA has referred only 38 cases since its inception for criminal prosecution. Of those 38 cases, the Justice Department has pursued 14. This record is pathetic. It is my understanding no one has spent one day in jail for violating federal OSHA law.

Because of this dismal record, states such as New York, Illinois and California have had to take the initiative. In cases where OSHA has imposed a minimal monetary fine for a "serious violation" of safety codes, state prosecutors have successfully pursued homicide convictions.

Regrettably, state prosecutors have recently pursued cases and won criminal convictions only to have them challenged on the grounds that federal law pre-empts state law. OSHA should immediately clarify the right of state prosecutors to impose criminal sanctions against employers who knowingly and recklessly disregard worker safety. If necessary, it should recommend to Congress that the law be amended to make absolutely clear that the federal statute does not pre-empt the states. In addition, we must have a tougher and more aggressive federal statute. The penalties are simply not strong enough.

It has been one year since the L'Ambiance collapse. Tragically, we have seen little movement to change any of the factors that contributed to the accident. OSHA has not reviewed or modified its reporting requirements. OSHA is undermanned and underfunded, yet it has not requested additional resources. OSHA has made no effort to establish a separate division to oversee construction, in spite of the unique dangers of the industry. OSHA refuses to recommend any legislative or regulatory changes imposing tougher criminal sanctions or addressing the pre-emption issue.

Twenty-eight people lost their lives. The victims' families must not only live with the loss of their loved ones but also with the reality that their government has not responded to their tragedy. If OSHA is not going to take action, it is time Congress takes action.

Senator DODD. Mayor, we welcome you. We know you are a busy man with all the problems that a mayor has of the largest city in any State, particularly in Connecticut, so we are grateful to you for being here.

Mayor BUCCI. Thank you, Senator Dodd, Senator Weicker.

While I appreciate the opportunity of appearing before you this afternoon, I wish that this visit to Washington had not been necessary.

We in Bridgeport, CT, have experienced a very traumatic year, which began last April with the collapse of the L'Ambiance Plaza residential development designed to provide more than 200 much-needed housing units at reasonable rentals, and some at low rentals, to the downtown area of our city.

What was unfortunate for the city was a calamity of immense proportions for the families of the 28 construction workers who died in that disaster.

For almost 10 days, we hoped and prayed and slaved away under the direction of my associate, Mr. Jonathan Best, who is here today, together with the leaders of the construction unions, removing hundreds of tons of stone and concrete in what proved a futile effort to try to find any survivors.

The loss of these fine building trade workers, most of them from the Ironworkers Union, will forever be felt and remembered in Bridgeport.

Just 3 days ago, we held a first annual memorial service and paid tribute both in church and at the memorial dedicated in their honor last fall.

This past week, Gov. William O'Neill signed into law the bill passed by the Connecticut General Assembly which outlaws in our State the lift-frame construction method which led to this disastrous building collapse.

I want to make clear at the outset of my testimony that nothing which I say here today mitigates in any way my sorrow that this terrible event took place or my affection and sympathy for the families of those who lost their lives in the L'Ambiance collapse.

A report by the Congressional Research Service on OSHA, the Federal Government's Occupational Safety and Health Administration, as reported in last Thursday's New York Times, indicates that in recent years over half of the agency's inspection forces have been devoted to the construction industry with good results in reducing fatalities.

I can only wish that OSHA had done a better job in Bridgeport. There is no question of OSHA's responsibility to enforce job-related safety and also of the poor job that was performed in this instance.

After OSHA came into existence and the States were given the choice, the State of Connecticut elected that OSHA be the regulatory authority for job safety in our State. Prior to that, job safety was the State's task. It was never one given by law or in any other way to the 169 separate municipalities in which the State is divided.

Ever since OSHA came into being, our city building department has looked to OSHA to enforce job-related safety while our building inspectors carried out the tasks legally assigned to them.

For years, Connecticut has had a State building code to which our building inspectors must adhere. This code is not meant to control the erection methods or safety. It sets standards for construction and materials.

It is the city's task, and we carried it out diligently in this instance to check on the quality of the proposed building materials, to inspect such construction going up as plumbing and electrical before they are covered by enclosing walls, and of course to check final construction prior to issuing a certificate of occupancy.

Our inspectors are governed by law and regulations which include nothing on safety, that being the responsibility of the State, and delegated from there to the Federal agency, OSHA.

It is of course within your legislative and budgetary constraints to restrict or enlarge OSHA's activities, and we sincerely hope they are enlarged so that such a tragedy as L'Ambiance will never again occur.

It was healthy for the construction industry and for those tens of thousands of workers engaged in this industry, whose unions lobbied so long and hard for such an agency as OSHA, that the Federal Government decided to assume the responsibility for job-related safety so that there could be uniform standards throughout all the 50 States.

If attaining such standards requires more funding and more stringent inspection, let it be forthcoming.

In conclusion, I must add this one important point. OSHA, with all the money in the world, is no panacea. The first line of defense against injury, accident and death on the job rests with the employer. It is his job. It is his responsibility. It must be his on-site management either directly or through his contractors that keeps the job safe.

It is the employer who is inspected by OSHA. It is the employer who must answer to OSHA and to his workers. It is the employer who receives the insurance to cover the progress of the construction work. It is the employer who must answer first and foremost to all of us and to his own conscience.

Thank you.

Senator DODD. Thank you very much, mayor and Congressman both, for your testimony.

[Information supplied follows:]

Herman Wolf Associates
P.O. Box 747 Fairfield, Connecticut 06430 (203) 255-1579
or 261-0217

N.Y. Times
4-21-88

THE NEW YORK TIMES,

OSHA's Chief Denies 'Retreat From Safety'

WASHINGTON, April 20 (AP) — The chief enforcer of the nation's job health and safety laws today vehemently denied a Senate committee chairman's accusation that there had been a "retreat from safety" by the Occupational Safety and Health Administration in the Reagan Presidency.

"There has not been," the OSHA Administrator, John Pendergrass, said. Senator Edward M. Kennedy, Democrat of Massachusetts, had charged earlier this week that the agency's enforcement of existing regulations had lessened while Administration officials have delayed new protective regulations.

"I would never for a moment have taken this position if there had ever been any hint that there would be a retreat from safety," Mr. Pendergrass said on the third and final day of hearings into the agency by the Senate Labor Committee, which Mr. Kennedy heads.

Assistant Labor Secretary Michael Baroody testified today that the agency in the last three years has issued 20 new job regulations, compared with 27 such rules in the previous 14 years.

Agrees Pace Too Slow

But Mr. Baroody agreed with previous testimony by agency critics that the pace was too slow.

Mr. Pendergrass and Mr. Baroody testified for more than three hours today, drawing conclusions different from those of Mr. Kennedy, who said the hearings would "show that while workers died, the agency has fiddled away their lives."

"We're going to have a new administration after this fall and, hopefully, we can get this agency back on track again," Mr. Kennedy said Tuesday.

A 22-page report by the Congressional Research Service appeared to bolster Mr. Pendergrass's contention that the agency has somewhat succeeded in reducing fatalities in one of

THURSDAY, APRIL 21, 1988 A25

the most hazardous occupations, construction.

Created in 1970

The report, obtained by The Associated Press, agreed that OSHA is now reaching only 11 percent of the nation's workers with inspections instead of the 78 percent intended when Congress created the agency in 1970. But it said all but two percentage points of that reduction was ordered by Congress, the Supreme Court or by the Carter Administration.

"By increments, Congress and OSHA, with some help from the Supreme Court, have done this by ultimately excluding from OSHA's target list essentially all workers except those in construction, oil and gas extraction, maritime operations and high-hazard manufacturing," the report said.

Congress, for example, has exempted about half of the nation's farm workers from coverage, the report said, in addition to workers in transportation, the nuclear industry and state and local governments.

And in response to a 1978 Supreme Court decision requiring OSHA to show probable cause to obtain a search warrant for inspections, the agency in 1979 began exempting low-risk manufacturing industries from routine inspections.

Except for construction and manufacturing, OSHA has little control, the Congressional researchers said. Highway accidents, assaults and aircraft crashes account for the majority of deaths in other industries.

OSHA's decision in the late 1970's and 1980's to devote half of its inspection forces to construction has reduced fatality rates in the industry by 54 percent over the last 13 years, the report said.

Fatalities in manufacturing, which at one time received about 50 percent of the agency's inspections but now receive less than 30 percent, have also declined but by a smaller 25 percent over the last 13 years.

Senator DODD. Let me just ask one question of both of you.

A study done by the Governor's office, which was completed fairly recently—"Oversight and Safety on Construction Sites"—I presume you have both had a chance to look at that. Let me read you the conclusion of that report and ask you both whether or not you agree with it.

"Based on these studies as well as interviews with staff of the Hartford area office and testimony delivered at public hearings"—and there were numerous studies, I might add—"it is our conclusion"—this is the Governor's report—"that the people of Connecticut cannot depend on OSHA to provide rigorous monitoring and enforcement of safety on construction sites."

Do you agree with that?

Mr. SHAYS. I would have signed my name to that report.

Mayor BUCCI. I agree with that, Senator. I think with respect to the L'Ambiance site, the number of visits—I believe there was one, maximum two—for a construction of that complexity and that size, only demonstrates that the people of Connecticut cannot depend on OSHA.

Senator DODD. I thank you both.

Senator Weicker.

Senator WEICKER. Thank you very much.

Senator DODD. Our second panel of witnesses includes Mr. Robert Georgine, president of the Building & Construction Trades Department of the AFL-CIO and Mr. Joseph Egan, Jr., business agent, International Association of Bridge, Structural, and Ornamental Iron Workers, AFL-CIO, Local Union 424, New Haven, CT.

We thank both of you for being with us here this afternoon.

Mr. Georgine, we will begin with you and then Mr. Egan.

STATEMENTS OF ROBERT A. GEORGINE, PRESIDENT, BUILDING & CONSTRUCTION TRADES DEPARTMENT, AFL-CIO, WASHINGTON, DC, ACCOMPANIED BY JUEL DRAKE, PRESIDENT, INTERNATIONAL ASSOCIATION OF BRIDGE, STRUCTURAL, AND ORNAMENTAL IRON WORKERS; AND JOSEPH F. EGAN, JR., BUSINESS AGENT, INTERNATIONAL ASSOCIATION OF BRIDGE, STRUCTURAL AND ORNAMENTAL IRON WORKERS, AFL-CIO, LOCAL UNION 424, NEW HAVEN, CT

Mr. GEORGINE. Thank you very much, Senator Dodd, Senator Weicker.

Let me first introduce Juel Drake, who is the President of the International Association of Iron Workers.

Senator DODD. Welcome.

Mr. GEORGINE. Mr. Chairman, I will be brief, but I do request that our full statement with all of its exhibits be included in the record.

Senator DODD. Absolutely.

Mr. GEORGINE. Joe Egan, who is with us today, and who is the business representative of Local 424 of the Iron Workers and covers Bridgeport, will address specifically in his remarks L'Ambiance Plaza.

The most important point that I want to make this afternoon is that the building trades recommendations are not new or different

from what Congress enacted in 1969. The Construction Safety Act, after extensive hearings and general agreement between unions and contractors, provided the basic foundation for effective construction worker protections.

Congress recognized in 1969 and established adequate means for the Department of Labor to protect construction workers; however, the Construction Safety Act applies to Federal construction work only and has never been implemented, and the will of Congress has been ignored by every administration for the past 19 years.

The passage of OSHA in 1970 shifted the Department of Labor's focus from protecting workers to defending OSHA against any repeal by opponents in Congress. The safety standards established by the 1969 Construction Safety Act and adopted by OSHA have proven to be effective when complied with on the jobsite.

Ten years ago exactly, to the day, on April 27, 1978, after 51 construction workers were killed by the failure of a concrete cooler tower under construction at Willow Island, WV, we presented the same recommendations that we are presenting today. Our recommendations were ignored then, and as a result, during the past 10 years, more than 25,000 construction workers have been killed and 5 million have been seriously injured.

In 1969, construction comprised 4 percent of the work force but was responsible for 15 percent of all fatalities. Today, construction consists of 5 percent of the work force and accounts for 26 percent of all fatalities.

Since passage of OSHA, 45,000 construction workers have been killed and 9 million seriously injured. Construction still has a fatality rate three times higher—three times higher—than all other occupations combined.

The Congress and the Department of Labor are not facing an impossible problem, and they are not limited by a lack of technology. In nearly every instance where a construction worker was killed or injured, the contractor was in violation of an existing safety standard. Compliance with existing standards would have saved thousand of lives in construction.

If the ability to prevent death and injury exists, as has been proven by a few responsible contractors who perform millions of man-hours without a single injury, why are the majority of contractors allowed to continue violating the law and killing workers at the rate of one every 40 minutes?

There is no other answer than criminal intent by employers to increase profit at the expense of the lives of their employees—the very issue that the Construction Safety Act of 1969 and OSHA were passed to remedy.

Killing workers during the process of construction is no different than killing a person during a robbery. They are both deaths in the pursuit of economic gain and in violation of the law. The resulting deaths are equal, and they deserve equal prosecution and punishment.

The case is clear—construction workers are being killed and injured by employers who violate existing standards. The Department of Labor is not enforcing existing standards or prosecuting employers who violate existing laws.

The Congress can now provide the protection for construction workers that was intended nearly 20 years ago in the Construction Safety Act and OSHA.

Legislation is needed to create a separate agency for Construction Safety and Health within the Department of Labor similar to the agency established by the Mine Safety and Health Act.

In addition to other provisions, this legislation should require the licensing of all contractors with Government enforcement on a companywide basis rather than project by project. When a pattern of safety violations is established, the contractor's license should be suspended or revoked.

We believe the enactment of this legislation will have an immediate and dramatic impact on the reduction of deaths and injuries in construction. These legislative provisions will establish accountability by the contractor and methods for the Government evaluation of contractor performance without increasing the Government's role or budget, nor penalizing responsible contractors who have effective safety and health programs.

The building trades' objective is to have all contractors perform at a level that has been obtained by a few contractors who have implemented effective safety and health programs.

So we are not asking for anything new or anything untested. The Corps of Engineers safety and health requirements were singled out in 1969 as the model for the industry and is the basis for our recommendations. Individual contractors, through cooperative safety programs with the building trades, have accomplished millions of man-hours at an injury rate of one-quarter of the national average. Several projects have been completed without a single lost time injury.

We believe that the costs to the Government can be minimized and the savings to the economy in the billions of dollars can be realized by enactment of the proposed legislation. The ability to protect workers exists, but Congress must provide the motivation to extend that protection to all tradesmen.

Thank you very much.

Senator DODD. Thank you very much, Mr. Georgine.

[The prepared statement of Mr. Georgine follows:]

TESTIMONY OF ROBERT A. GEORGINE
ON OCCUPATIONAL SAFETY AND HEALTH IN
THE CONSTRUCTION INDUSTRY

Mr. Chairman and members of the Committee: My name is Robert A. Georgine. I am President of the Building and Construction Trades Department of the AFL-CIO. I am appearing here today on behalf of the approximately 6 million members of the 16 national and international unions affiliated with the Building and Construction Trades Department.

Thank you very much for inviting me to appear before this Committee to testify on the present status of the Occupational Safety and Health Administration. My expertise and concern is in the building and construction industry and my remarks will be addressed to OSHA's record of improving safety and health in that industry and to offering practical solutions to the growing number of problems.

There can be no dispute that the current record of occupational safety and health in the construction industry is horrendous. The number of accidents, injuries and deaths is appalling and should be of concern to every person in this Nation. What is so disturbing about the current situation is that it exists notwithstanding Congress' recognition 18 years ago of the need for safety and health legislation in the construction industry. Eighteen years of federal legislation, frankly, has not worked and it is necessary for Congress to re-evaluate the

situation and determine what must be done to turn this situation around. I hope this hearing is a positive step in that direction.

As I mentioned, federal legislation of occupational safety and health in the construction industry began some 18 years ago. In 1969, Congress enacted the Construction Safety Act. This Act was limited to Federal, federally financed or federally assisted construction. It was enacted in recognition of the magnitude of the problem facing the construction industry in terms of safety and health issues. It is interesting to examine the statistics cited in the Senate Report as having justified the need for that law. Those statistics showed that the construction industry had an accident frequency rate that was almost twice the all-industry rate. They showed that over 20% of the workers killed yearly and over 11% of the workers disabled in on-the-job accidents were in the construction industry. They showed that the 2,800 construction workers killed on the job in 1968 represented the highest death rate for any industry in the United States. They showed that since 1959 there had never been less than 2,300 construction workers killed and 209,000 construction workers disabled each year. They showed that the construction industry employed 4 million workers and that another 20 million workers depended on the construction industry. That

number represented one-third of the nation's workforce. Finally, the statistics showed that the annual economic dollar value of the construction industry was 10% of the gross national product or 91 billion dollars and that work accidents cost approximately 3 billion dollars per year.

As impressive as the above figures are, they represented only a conservative estimate of the number of deaths and injuries. As noted during the debate on the 1969 bill, statistics only reflected the lowest estimates since there was no system to accurately report deaths and injuries.

Soon after the Construction Safety Act became law, Congress enacted the Occupational Safety and Health Act of 1970. Adoption of regulatory standards in the enforcement of safety and health in the construction industry has since been covered by the Occupational Safety and Health Act. OSHA, however, applies to occupational safety and health in all industries and the Act does not differentiate between the construction industry and other industries. Federal and federally assisted construction, which makes up 25% of the construction industry and employs one million workers, still falls under the concurrent jurisdiction of the 1969 Act, but those workers are not reaping the benefits of that Act due to the administration of OSHA.

The legislation described above has not led to the creation of safe or even safer workplaces in the construction industry. In 1969 when the Construction Safety Act was enacted, construction workers constituted 4% of the total workforce and accounted for 15% of the total fatalities. Today, construction workers constitute 5% of the workforce and account for 26% of the fatalities. Similarly, a comparison of the statistics cited by the Senate in 1969 with the same statistics today shows that there is an even greater need for more effective regulation of safety and health today than there was in 1969. Congressman Biaggi's prediction in 1969 has come true. He stated that "[i]f effective action is not taken, the record is going to get worse, not better." Effective action has not been taken and the record is worse. At the risk of being redundent, I repeat his warning today. If effective action is not taken, the record is going to get worse not better.

The Department has become very active in the legislative field in order to do what it can to make construction worksites safe places to work. I recently testified on OSHA and the construction industry before the House Subcommittee on Health and Safety and presented the same proposed legislation that I will address later in my remarks. The Department also testified before the House Employment and Housing Subcommittee in support

of the use of criminal sanctions for occupational safety and health violations. The Department advocated vigorous enforcement of criminal sanctions, where needed, by Federal, state and local law enforcement agencies and also supported the enactment of H. R. 2664, the "Corporate Criminal Liability" bill. A copy of the testimony is attached. Along the same lines, the Department has actively lobbied for stronger enforcement mechanisms by testifying in support of S. 1014, the "Federal Civil Penalties Inflation Adjustment Act of 1987", which would have the effect of indexing Federal civil penalties to inflation. Enactment of this legislation would increase OSHA penalties and act as a greater deterrent to safety and health violations. Finally, the Department has worked closely with Senator Weicker and his staff on S. 2086, a bill to set up a trust fund with the money collected by OSHA in litigation over the collapse of L'Ambiance Plaza in Bridgeport, Connecticut. The trust fund will be used to assist the victims of that collapse.

The pending pieces of legislation are beneficial and they address urgent needs in the industry. The problem, however, is so basic and broad-reaching that the Department feels only a comprehensive overhauling and restructuring of OSHA will achieve the desired result -- a safe and healthful workplace.

89-240 - 88 - 2

Blame for the present tragic state of affairs should not wholly be placed on the Occupational Safety and Health Administration. It is all too easy for unions and employers to point to OSHA when accidents occur and say that the agency failed to prevent the accident. But OSHA did not cause that accident, and its inabilities to prevent accidents and to deter employers from creating unsafe workplaces are not entirely of its own making; its hands are tied by inadequate legislation and insufficient resources. Although the Building and Construction Trades Department is not always in support of the Occupational Safety and Health Administration, we do recognize that OSHA is well intentioned and is committed to workers' safety and health.

If blame is to be assessed, the owners and contractors must shoulder a great part of that blame. It is their responsibility to ensure that employees are furnished a safe workplace and are trained in the proper techniques to recognize and avoid hazards.

What is more important than assessing blame, however, is figuring out why the present legislative scheme is not working and determining what can be done to guarantee a safe and healthful workplace for construction employees. I cannot begin to enumerate all the specific deficiencies in the Occupational

Safety and Health Act or in the administration of that Act. I can, however, make some general observations that might assist you in understanding what some of the basic problems are in the construction industry today and how they can be remedied by further legislation.

I want to focus on a concrete example to bring these problems home to you. You are all undoubtedly aware of the tragic accident that occurred in Bridgeport, Connecticut last April. L'Ambiance Plaza, an apartment project in Bridgeport, collapsed killing 28 workers. Before discussing the particulars of the problems at Bridgeport, I would like to express some reservation about focusing on this catastrophic accident. Just as in the airline industry where a major plane crash captures all the media attention, highlighting construction accidents like the one in Bridgeport tends to diminish the significance of the thousands of "smaller" accidents resulting in deaths and serious injuries. All construction accidents are of enormous concern to me and the Building and Construction Trades Department. My remarks about Bridgeport must not be taken to mean that I place greater importance or emphasis on accidents that only capture the media's attention. Nonetheless, accidents of the sort that occurred at Bridgeport do open the Nation's eyes to the dangers

in the construction industry and I would like to believe that something of value could come out of something so tragic.

Before addressing myself to the unsafe conditions at Bridgeport, I must also extend my personal thanks, and I hope you will give special recognition, to the building tradesmen in Bridgeport and those who traveled from elsewhere for their leadership and efforts in the rescue operations. Their volunteer efforts to save their brothers at considerable personal risk was truly heartwarming. Now, onto my discussion of the problems at Bridgeport.

One reported problem at Bridgeport that is illustrative of perhaps the largest problem in the construction industry was the lack of management accountability for safety in the total construction process. There were several subcontractors involved in different operations at Bridgeport but neither the owner nor any of the contractors assumed responsibility for overseeing safety for the entire project. The construction industry differs from all other industries in a significant way. In other industries the owner and employer are synonymous. The managerial structure needed to oversee jobs in other industries is a structure that is wholly internal to the employer. The construction industry, however, is a multiemployer industry. Its

managerial structure requires that each employer must have supervisors who are competent at recognizing hazards and who can stop work if a danger to employees exists. But beyond the internal management structure, the construction industry also requires a management structure that ensures that there is someone on a construction project who is accountable and responsible for overseeing safety on the project as a whole. What the statutory scheme fails to recognize is the interrelated nature of the employers' work in the construction industry. What was certainly an inadequate statute in this regard when it was enacted in 1970 has become even more so as the construction industry has become more specialized. It is possible to find as many as 300 subcontractors on a large project today. Regulations issued under the 1969 Act provide that the prime contractor on a job must be responsible for all work done under the contract. Projects today are not operated in this manner and this regulation is not generally enforced by OSHA. Legislation must ensure that someone be accountable for the coordination of safety among all employers and employees on a project.

OSHA recently released a report it commissioned on Bridgeport and also issued willful and serious citations primarily against the lift-slab contractor and the general contractor. I congratulate OSHA on its decision and commitment,

in this instance, to issue such strong penalties. I also congratulate OSHA on holding the general contractor responsible for its failure or refusal to adequately supervise the job. Citations such as these might assist in alleviating some of the concerns I mentioned above, but punitive action, while necessary, should be secondary to preventative action. The focus must be on educating employers as to the safe methods and practices and providing clear guidance to employers as to their responsibilities on a worksite. Without a recognition, in the legislation itself, of the problems inherent in the structure of the construction industry, I fear the death and injury toll will only continue to increase.

It has also been reported that a professional engineer at Bridgeport found cracks in the floor slabs but did not do anything about them. There is no well-defined system of responsibility for safety at construction worksites. Supervisory employees who are qualified to recognize the types of dangers which might lead to accidents are not guaranteed the authority necessary to prevent such accidents. They are not guaranteed the authority to order employees away from a dangerous area or to shut down work if necessary. There is also no way to ensure that an employer has personnel at the worksite who are even qualified to recognize hazards. Our laws require licensing of other

professions, such as nursing, where life threatening situations might arise. States even require licensing of barbers and hairdressers. But for some reason, we require no licensing in one of the most life threatening industries in our Nation.

It is reported that the Occupational Safety and Health Administration only inspected the worksite at Bridgeport once in the early stages of construction. Again that is not meant to be a criticism of that agency; we recognize that the resources available to OSHA are so limited as to make it impossible for it to inspect all sites on a regular basis. But, it raises a subject of general importance: the inadequate system of targeting projects for inspection that presently is in place. It has been our experience that there are a number of construction employers who are concerned about safety and who recognize that preventing accidents is dictated not only by humanitarian concerns, but by economic considerations as well. On the other hand, there is another group of employers who appear to have no sense of commitment to safety and who do not appear to learn from prior injuries or deaths, or from OSHA citations for that matter. One reason for their continued lack of commitment to safety is that many employers feel that it is cheaper to pay the penalties assessed by OSHA than it is to ensure that work is done in a safe manner. As I will discuss later, this reasoning is faulty

because any cost in ensuring employee safety will more than pay for itself in economic savings, but nonetheless it is apparent that the statutory penalties do not act as a deterrent. Since it is clear that certain employers continually have a bad safety track record, any inspection targeting system should first be directed at those employers or those projects who have a higher accident incident rate than is "average." I do not think OSHA would disagree with this proposition.

Unfortunately, due to inadequate recordkeeping and reporting requirements and due to the lack of a centralized records location, it is presently impossible to target those employers or projects. As stated in OSHA, recordkeeping and reporting are necessary "for developing information regarding causes and prevention of occupational accidents and illnesses." The Secretary has reserved Section 1926.22 of the regulations for "recording and reporting of injuries" in the construction industry, but no regulations have been promulgated.

Another inspection problem is that OSHA does not have enough inspectors to do the job. Therefore, due to the limited number of inspectors, the inspectors that are hired are generalists. They are expected to inspect worksites in all industries. An inspector who was trained in the food service

industry, however, is not qualified to inspect a construction site. While it may be true that each industry suffers from the lack of inspectors who are specially trained in that industry, I feel the construction industry is the most adversely affected.

What I have discussed above are just a few of the major problems in the construction industry and in the present federal regulation of safety and health in that industry. There can be no question that something must be done. Accidents such as the one at Bridgeport have previously occurred yet legislation has not been forthcoming to require employer accountability on construction sites. I recall the major accident at Willow Island, West Virginia in 1978, where a cooling tower under construction collapsed killing 51 workers. After that accident, the Building and Construction Trades Department testified before a Congressional subcommittee at the site of the accident and tried to effect some changes in the administration of OSHA, but nothing was done. We cannot afford to let this epidemic of construction industry accidents continue unabated.

It is obvious from the types of problems I have outlined above that merely tinkering with the Occupational Safety and Health Act is not an appropriate solution. We know what the problems are and they call for only one answer -- comprehensive

legislation setting up a new administration under the Department of Labor to deal with construction industry safety and health issues. This is not a novel idea. Congress recognized in 1977 that the special nature of the mining industry and the dangers in that industry required the enactment of a comprehensive statute and the establishment of a separate administration. What is needed in the construction industry is legislation similar to the Mine Safety and Health Act.

I would like to read the Congressional findings in the Mine Safety and Health Act and substitute the construction industry for the mining industry to demonstrate that there is at least an equal need for such legislation in the construction industry. Congress declares that (a) the first priority and concern of all in the construction industry must be the health and safety of its most precious resource - the construction employee, (b) deaths and serious injuries from unsafe and unhealthful conditions and practices at construction sites cause grief and suffering to the employees and to their families, (c) there is an urgent need to provide more effective means and measures for improving the working conditions and practices at the Nation's construction sites in order to prevent death and serious physical harm, and in order to prevent occupational diseases originating at such sites, (d) the existence of unsafe

and unhealthful conditions and practices at the Nation's construction sites is a serious impediment to the future growth of the construction industry and cannot be tolerated, (e) the owners and employers at such construction sites with the assistance of the employees have the primary responsibility to prevent the existence of such conditions and practices at such sites and (f) the disruption of construction and the loss of income to owners, employers and employees as a result of construction accidents or occupationally caused diseases unduly impedes and burdens commerce.

There is no question in my mind that the construction industry should be given special treatment similar to that of the mining industry. In one year in the mining industry approximately 130 miners are killed. In the same year in the construction industry, approximately 2,500 or twenty times as many construction workers are killed. There are more fatalities in the construction industry in any given year than there are fatalities from airline accidents and yet Congress has seen fit to establish the National Transportation Safety Board. The need for separate legislation and separate administration in the construction industry is not limited to the statistics on accidents, deaths, and injuries, however, but it is also apparent from the special nature of the construction industry as compared

with all other industries. As I will discuss later, many of the provisions in our proposal as well as our commitment to improve construction safety and health through the legislative process have received the support of the business community. In fact, many contractors already operate in a way that would comply with all of the following proposed provisions. We are not requesting that Congress adopt legislation that would impose an impossible burden on employers. We are asking that Congress legislatively require that all employers rise to the level of the few safety-conscious employers that operate today.

The legislation that we are urging Congress to enact should include the following provisions:

- The establishment of a Construction Industry Safety and Health Administration in the Department of Labor similar to the Mine Safety and Health Administration;

- Increased responsibility for the Advisory Committee on Construction Safety and Health. This Committee was established by the Construction Safety Act of 1969 as a tripartite committee including employer representatives, representatives of employees "primarily in the building and construction industry," and public representatives "who shall be

selected on the basis of their professional and technical competence and experience in the construction health and safety field." This Advisory Committee was originally given the mandate to advise the Secretary on the development of standards and also the development of policy for the construction industry. Upon enactment of OSHA, the functions of Advisory Committees in general were limited to assisting the Secretary in standard-setting. The policy functions of the Construction Advisory Committee are still in place, at least as to those projects covered by the 1969 Act. Since the Secretary does not differentiate between federal or federally assisted projects and other projects in terms of applicable policies and standards, the Advisory Committee should be consulted with regard to policy matters. The Secretary does not use the Committee's expertise on policy issues thereby curtailing the usefulness and effectiveness of the Advisory Committee. Legislation should affirmatively establish that the Advisory Committee shall assist the Secretary on all policy matters.

- Like the Mine Safety and Health Administration, the Construction Industry Safety and Health Administration must have the authority to enter and inspect a worksite without a warrant. The Supreme Court has granted MSHA the authority to inspect a worksite without a warrant but has denied OSHA the same

authority. We believe that a warrantless inspection in the construction industry would be permissible under the rationale of the Supreme Court in the mine industry case. Similarly, in the event of a catastrophic accident, the Administration should have the authority to freeze a worksite in order to organize a rescue operation or to inspect that site for the cause of the accident.

- A substantial increase in the size of penalties. Legislation should emphasize the prevention of accidents but the reality is that some employers need a strong economic deterrent. It appears the present Administration would support an increase in penalties. The U.S. Attorney General's office recently concluded that willful violations of the Occupational Safety and Health Act that result in death are now punishable by fines of up to $250,000 for individuals and $500,000 for organizations under the 1984 Comprehensive Crime Control Act and Criminal Fine Collection Act. It would be better to have the increased penalties, including, where appropriate, increased imprisonment penalties, added explicitly to the appropriate statute. Obviously where death and serious injuries occur there is an expectation that employers should be made to pay to the fullest extent possible. However, even where an employer is lucky and its violation of applicable standards does not result in an accident, severe penalties are necessary so as to deter

potentially hazardous or life-threatening situations. When a driver is caught driving under the influence of alcohol, his license may be revoked and he may be subject to a severe fine even if he was not involved in an accident. Is it too much to ask that construction workers be protected from unsafe employers to the same extent that the public is protected from drunk drivers?

- Employees must have the right to refuse hazardous work without a loss of pay where the employer could have prevented the hazardous condition.

- Certain types of projects are generally more potentially dangerous than others. Those potentially dangerous projects should be subject to a permit requirement.

- All employers should be required to complete a step-by-step construction process plan and an analysis of the hazards foreseeable on the project.

- All employers should be required to adopt a comprehensive and certified safety and health program, which should include provisions for supervisory and non-supervisory employee training. Where there is an exclusive bargaining

representative, the employer should be required to engage in a cooperative labor-management safety program. The Building and Construction Trades Department has had extensive experience working with employers in these types of cooperative programs. These programs have achieved extraordinary success in the reduction of worksite accidents and injuries. The legislation I am proposing only asks employers to provide the same kind of workplace that already exists where we work cooperatively with management. In order to encourage unions and employees to engage in these types of cooperative programs, the legislation must contain provisions protecting unions and individuals from liability for assisting the employer in fulfilling the employer's statutory duty to provide a safe workplace.

- Each employer must have a licensed construction safety supervisor and where there is more than one employer on a site, the owner must insure that a licensed construction safety supervisor and licensed project superintendent is hired to oversee the entire project.

- There must be more stringent recordkeeping and reporting requirements and there must be a central records location. I mentioned earlier that the statistics cited to support the enactment of the 1969 Act were conservative due to

the inadequacy of reporting and recordkeeping. I find it appalling that even today, after Congress has directed the Secretary to develop effective reporting and recordkeeping requirements, it is possible to read one report stating that the annual occupational death toll is 3,750 and another report stating that the figure should be 6,900. The Secretary has not developed an adequate system and it is time for Congress to take a more directive role in this regard.

- The establishment of a Construction Industry Safety and Health Training Academy responsible for making available training for construction industry safety and health inspectors, project supervisors, project superintendents, employee safety representatives and others.

I have listed above some of the major provisions that a comprehensive statute covering safety and health in the construction industry should contain. I am also providing to the Committee a written proposal prepared by the Building and Construction Trades Department that contains the points mentioned above and other points that we believe should be included in a bill to improve safety and health in the construction industry. It must be kept in mind that any standards contained in the legislation or standards issued under its authority are minimum

standards. State and local regulation of construction safety and health that is more protective of employee safety than the federal regulation must be encouraged and must not be preempted by the federal regulation. By virtue of some unfortunate language in Section 18 of OSHA, courts have ruled that, in the absence of an OSHA-approved state plan, more protective state and local laws and regulations are preempted. This is clearly contrary to Congress' intent.

I would lastly like to put this whole discussion into perspective. Health and safety issues do not and should not pit management against labor. Too often safety issues are perceived to be part and parcel of the larger struggle between labor unions and employers. In fact, the Building and Construction Trades Department has worked successfully, hand-in-hand with many employers in promoting safety and health. Those employers have realized that it goes beyond humanitarian benefits to provide a safe workplace to employees. During the House Subcommittee hearings where I testified on this issue and introduced the proposed legislation, a number of employer associations testified. Some of those associations actually came out in support of many of the provisions in the proposal. Admittedly, they did not actively support the establishment of a separate administration, but they did feel that many of our suggestions were valuable.

I was heartened to read a report a few years ago by the Business Roundtable where they reached the same conclusions the Building and Construction Trades Department reached long ago. In the Business Roundtable's Report A-3, Improving Construction Safety Performance, the summary states "Owners have long recognized and honored a moral obligation to provide a safe work environment to minimize injuries. The primary purpose of this study report is to demonstrate that owners have, in addition to their moral commitment, an economic incentive to help reduce the number of accidents that occur on their construction projects. The high cost of accidents gives owners as construction users good reason to concern themselves with the safety efforts of the contractors they hire. Past research has shown that accidents are, to some extent, controllable by all levels of construction management. Reasonable reductions in the frequency and severity of accidents would lower the $8.9 billion cost of accidents by as much as $2.75 billion or 8% of direct construction labor payroll, a year. So there is ample economic incentive, in addition to humanitarian concerns, for owners to play an important role in construction safety." Providing a safe workplace makes good business sense. As stated elsewhere in the report "An effective safety program should cost significantly less than the dollar losses in accidents that otherwise are apt to incur."

I have talked with the Business Roundtable about our proposal for legislative action and I was pleased to hear that the Roundtable was equally concerned about the unsafe workplaces in the construction industry and equally committed to promoting reforms in construction safety and health. While we may not agree on the final shape of that reform, there is surprising unanimity on many of the key issues and solutions.

Safe workplaces in the construction industry are not merely unobtainable dreams. The Building and Construction Trades Department has had experience working with employers on more than 40 projects where injuries have been reduced to near zero. If all employers were as conscientious as the ones we have worked with or if they all recognized, as has the Business Roundtable, that safety can result in economic savings, there might be no need for this federal legislation. Unfortunately, not all employers are so concerned about their employees' welfare and not all are convinced that it is cheaper to protect lives than to endanger them. The federal government must do what it can to ensure that all workers are guaranteed the basic human right to a safe and healthful workplace.

Thank you for giving me this opportunity to share my thoughts with you.

Senator DODD. Joe Egan, we thank you for being here, and at the outset let me just say to you how deeply proud both Senator Weicker and I are of you and the men you work with. Your response and the response of your coworkers at the time of that disaster was something that every person in the State of Connecticut takes pride in, but particularly you ought to as the leader of your local, and the people who were on that site for days, trying to save lives. It was really one of the most remarkable performances we have seen in many, many a year, and it is truly an honor to have you here with us today and offer your testimony.

Mr. EGAN. Thank you. I want to thank you for inviting me to appear before your committee.

I am here to share with you some of the experiences we had at the site of the L'Ambiance Plaza collapse in Bridgeport, CT. I would also like to share with you, based on a hands-on experience, the overwhelming need to establish a construction industry safety and health administration within the U.S. Department of Labor, similar to what the Congress of the United States has seen fit to provide for the mine industry.

On April 23, 1987, the L'Ambiance Plaza which was under construction collapsed, burying and killing 28 building tradesmen under 4,000 tons of concrete and twisted structural steel. The collapse also caused serious injury to 12 other tradesmen.

This was a building that was to have 13 floors of living space and five levels of parking. Unbelievable as this may sound, the two buildings were totally collapsed in a matter of 10 to 15 seconds.

We, the building tradesmen, with the assistance of some of our contractors, went to work immediately in the hope that we would be able to save our brothers. We worked around-the-clock on a three-shift basis, and it was some 204 hours later when we had accounted for and removed them all from the rubble and debris. There were 28 dead and 12 injured. The fact that anyone survived this terrible tragedy is a miracle in itself.

The untold story is that the rescue effort was organized, run and staffed almost entirely by union volunteers. I might add here that working under very dangerous conditions, there were no further injuries during the rescue. I cannot say enough about the building tradesmen who all worked on a volunteer basis and our contractors who came forth with tools, equipment and basically anything they could get for us that was needed. It was truly an excellent labor and management effort.

The emotional and psychological scarring that was done to all involved in the collapse and the rescue effort is beyond words.

The men and women that work in the construction industry deserve and expect more than is now being provided by the Federal Government with regard to their health and safety.

When you have an agency that gets its funding from the Congress of the United States, then we need to make sure that that agency has all of the necessary tools to enforce the law and get the job done.

It was one year ago that 28 men lost their lives in the collapse of the L'Ambiance Plaza. It will be 10 years tomorrow that 51 men lost their lives in the collapse of the cooling tower at Willow Island, WV, and in those 10 years, another 25,000 men lost their lives in

construction accidents, and hundreds of thousands more have suffered serious injuries.

Yet, the proposals for the new safety and health agency for the construction industry which were put forth by the Building & Construction Trades Department of the AFL–CIO under the direction of Bob Georgine some years ago fell on deaf ears.

We can no longer tolerate a passive agency of the Federal Government that is underfunded, understaffed, and does not have the enforcement powers to ensure that all construction workers are guaranteed the basic human right to a safe and healthful workplace.

My testimony is based on my 32 years as an ironworker, with 16 of those years as a business agent and my hands-on experience during and after the rescue effort at the L'Ambiance Plaza.

OSHA's track record in the construction industry over the last 17 years is not good. Please tell me how many more people have to die before the Congress of the United States decides to do something?

We wonder how many will be killed in the future if corrective legislation is not passed. We wonder how many construction workers would have been spared injury and death if OSHA had met the extent of the legislation that created it.

The construction workers ask that you pass legislation that will guarantee them a basic human right to a safe and healthful workplace.

Thank you for your attention, your consideration, and again for giving me the opportunity to appear before your committee.

Senator DODD. Thank you very much, Joe.

Let me ask both of you sort of a bottom line question here. This lift slab technique, you heard where the State legislature in Connecticut has now banned that form of construction.

What is your opinion, the two of you? Should that type of construction, in light of the problems that we have had in Stamford prior to this tragedy—and also, there was an incident or two at L'Ambiance Plaza—should this type of construction be banned across the country?

Mr. EGAN. The project was the 13th project we had done in the State of Connecticut using the lift slab method. They had done something different on this one. They used what they call a shearwall concept. Previous to that, in the previous project, after you got a couple floors up, then the iron workers would put another four or five men in there, and they would be welding up all the bracing. That did not occur on this project. I would say that using the shearwall concept and lift slab construction, that that part of it be banned, that that type be banned, yes.

Senator DODD. Mr. Georgine.

Mr. GEORGINE. I agree.

Senator DODD. Mr. Egan, I wonder if you might just take a couple of minutes and sort of describe the actual work that the construction workers were doing at the time; what phase was this in—sort of lay this out a little bit for us if you can, the setting as it occurred on April 28, 1 year ago.

Mr. EGAN. The slabs, as I understand it, they had the eighth floor in place, and the other five were set in what they call "packs"

up above. The men were placing wedges and welding up the wedges when it all occurred.

Our feeling is that what occurred was something that had to do with the engineering, because four or five of the iron workers who were working on that project—it was not their first job; they had worked on five or six of them. So if there was something wrong that they could visibly see, they were not shy kind of people, and they would have said something right away.

This was something we feel was unseen, and it just happened so quickly—again, as I said in my testimony, it was a miracle any of them got out of there.

Senator DODD. Was it a member of the union who was injured at the accident at Metro Center in Stamford?

Mr. EGAN. He was a member of our union, yes.

Senator DODD. Then there was an incident where at least the OSHA inspector visited the L'Ambiance Plaza site only once prior to this accident?

Mr. EGAN. Correct, and my understanding was that it was for an inspection on a trench. It is unfortunate, but in the State of Connecticut, we only have two people with construction expertise. Again, we have a different industry. Our industry is different than this room. You could walk into this room a year from now, and nothing has changed—maybe the tablecloth will change, but nothing else is going to change; the furniture is all in the same place and everything else.

You go on a construction site, and that changes within hours, and every day it changes. There is another trench dug, there is another slab in place, there is more structural steel up, there are more holes opened up. That is what makes construction work so dangerous, and that is why we need to have a separate agency.

If the Congress of the United States can see fit for the mine industry in the United States to have a separate agency for safety and health, then they should be able to see fit for the construction industry, because I would say—and Bob might bear me out here—I think we probably lose five to one as opposed to what the mine industry loses in death every year.

Senator DODD. It is the highest in the country; the injury rate per hundred is the highest.

Mr. EGAN. Yes.

Senator DODD. Should an OSHA inspector be able to shut down a site if he feels it is basically unsound?

Mr. EGAN. Just like a policeman is able to arrest somebody if he sees them getting ready to commit a crime. But they don't have that authority.

Senator DODD. I know that. That is why I asked the question.

Mr. Georgine, do you have any comments on those points?

Mr. GEORGINE. Well, construction is a hazardous business. We know that. It is just the nature of the business. But the point is that there are certain things that can be done to reduce the degree of hazard that exists on a construction site. Those things are outlined. They are outlined in the law. All it takes is enforcement.

You cannot avoid every act of God or every accident that is going to occur, but you can certainly take the steps that are necessary to

reduce the possibility of that happening. That is what OSHA is supposed to do, and OSHA hasn't done that.

In the first place, they have inspectors on the job who are not even qualified to inspect a construction job, who do not even know what it is or what is dangerous or what is not dangerous, what is extraordinary and what is not.

Senator DODD. What would be your standard; it is the standard of five people injured or one death which triggers an investigation—I think the regulation is basically that. Is that too loose a standard, too light a standard? What should the standard be?

Mr. GEORGINE. I think to trigger an investigation is too late. If one dies, that is a tragedy.

Senator DODD. I do not mean an investigation—we had the case in Stamford where a fellow lost a couple of fingers on one hand. The argument is, well, that is not enough; that is not enough to warrant an investigation at that particular point. What is, in your mind? What should be the trigger?

Mr. GEORGINE. A pattern, a pattern of mishaps on a job. I do not know if it should be three or five or what. I do not know what we have recommended, as a matter of fact; I would have to check. But the point is that whatever it is, there has to be active compliance inspectors on a job as often as is needed, and it depends a lot with regard to the size of the job, the kind of job—some jobs are the kind that are not extremely hazardous, but there are those that are, and they should have inspectors on those jobs, and they should be there as often as needed. And they are called; many times, they are called by workers on the job who see things that are hazardous.

Senator DODD. OSHA claims it has had about 35,000—and Mr. Pendergrass can correct me on this when he comes up—but around 35,000 inspections last year, I think; and yet, when you count those 35,000, as I read it, anyway, if there are seven employers on a construction site, and one construction site is inspected, it counts seven times.

Is my assessment correct on how that is done, and if so, aren't those phony numbers?

Mr. GEORGINE. They are phony numbers because they can have as many—I understand somebody testified that they had 48 inspections in 1 day. Well, 48 inspections in 1 day—just think about that for a moment—is that an inspection? I mean, are you inspecting to see what actually is taking place on a job and do 48 of them in a day? That is impossible. That is just crazy.

So they do that because we have made a lot of noise, and we have raised a lot of objections and brought a lot of attention to what has been going on. So now they bring up the number of inspections by getting as many done in 1 day that do not mean anything. That is part of the problem.

Senator DODD. Well, I am grateful to you for all you have done over the years. And Joe, again my compliments to you, and please express them to your coworkers up there, for the job you did during that tragedy.

Mr. EGAN. Thank you.

Senator DODD. Senator Weicker.

Senator WEICKER. I have a few questions.

Bob, first, you were here in that period of time that I referred to, when OSHA was the target of the new administration as being the example of unnecessary bureaucracy—all they did was count the number of rolls of toilet paper in the toilet—remember that?

Mr. GEORGINE. I do, very well, Senator.

Senator DODD. It was almost with ridicule that OSHA was brought to its knees in the early seventies. Now, how in heaven's name are we going to go ahead and get OSHA to do the job when on the floor of the U.S. Senate 2 weeks ago, not even a majority of Senators could be mustered to vote on a bill which would require an employer to say that there were dangerous chemical or toxic substances present?

I mean, do you think safety in the workplace is a priority issue right now? I am talking about Democrats and Republicans, I am talking about the Nation as a whole—do you think it is a priority?

Mr. GEORGINE. It doesn't appear to be. How many do you have to kill in order for it to become a priority?

Senator WEICKER. That is the question, isn't it?

Mr. GEORGINE. The percentage of deaths haven't been reduced since we have had OSHA; they have increased.

Senator WEICKER. The actual figures—which you know better than anybody else here, because nobody has been out in the forefront of this issue nationally more than you have—with MSHA—and I am not denying all the safety precautions necessary for our miners—is that there is an investment of about $500 per miner; at the same time, there is an investment of only $2.50 on behalf of the other workers in terms of safety. Now, I think that is a little out of whack.

Now, I don't want to bring the funding for mine safety down; I am willing to take the $2.50 and bring it up to the $500, I think is what we are talking about.

Mr. GEORGINE. Well, that is our position also, Senator.

Senator WEICKER. I think that clearly, that is something that somehow, one way or the other, has to be brought to people's consciousness, and I sat there furious that most of the people when I was up in Bridgeport on Saturday didn't understand what I was talking about when I was talking about this chemical substances bill on the floor, because they hadn't been down here, but everybody was walking around, and here were all the families—it was a sight to behold. It was a cold, rainy day up there, with tears coming down their faces, and having little kids with them, and the various families who were there—and they sort of expect, well, we are here in church, and we are doing our thing, but we assume that the Federal Government is also taking care of the problem.

I had to get up there when I faced the press and say no, they are not taking care of the problem at all. They did not bring anybody to the situation of reality where something was being done.

So again, it is good to have you here. Let me ask you—and again, let me through you commend those in your organization for all that they do in our State—I understand you may have some concerns about the National Bureau of Standards report which cited the likely cause of the collapse to be the failure of a single shearhead.

Can you tell us why you believe that to be the case?

Mr. EGAN. Well, I don't really believe that to be the cause of the accident. I don't believe that the failure of one shearhead could cause two buildings to totally collapse in 10 to 15 seconds.

Our concern was with the layout of the stress tendons. We do not think enough looking into has been done into that. We also had some concerns about the foundations, and we don't think enough looking into has been done into that. Not only don't we think it, but some of the people in the engineering community do not think it, either. We think those things ought to be looked at and some more study done on it.

Senator WEICKER. Have you observed OSHA in Connecticut since the accident on various construction sites, and if so, what conclusions have your observations come to insofar as the adequacy of their job performance right now?

Mr. EGAN. Basically, OSHA in the State of Connecticut really doesn't do any policing so to speak; they don't have the people to do the policing. They will come when you make a written complaint. That might not be the next day. It might be two or three days later. We have a law that the worker in the State of Connecticut assumes is going to protect him; it doesn't. The law doesn't. If you had a savvy contractor who did not want OSHA on the site, he would say to the guy, "Get off my site and go get a warrant. If you have got something to look after here, you go and get a warrant." By that time, he can clean up whatever he has to clean up, and they cannot cite him.

The part that really bothers me—you know, we talk about this Government of ours, we sit here and we talk about budgets and numbers, and they put out a big fine that made headlines in every newspaper in the United States, a $5 million fine—they haven't collected a nickel, and they probably won't. That is the sad part of it all. They cannot even fine anybody and collect and enforce it.

Here we are, sitting here, telling the people of this country that we have a law that provides for your safety and health—but we cannot enforce it. That is the part that really bothers me.

Senator WEICKER. In other words—and I don't want to paraphrase—but insofar as the OSHA aspect of safety in Connecticut today, you are saying it is no different than it was the day of the L'Ambiance collapse.

Mr. EGAN. No, because we don't have any more people. You have to have people out there—it is like the city of Bridgeport having a whole lot of laws to enforce and not having any policemen. You might have one policeman there to answer the phone for each shift, but if you don't have anybody out there, riding around in the car, or somebody stopping in around a place where you think there might be a crime going to be committed, we are not doing anything. We are not doing anything.

We have this big, great law that doesn't do anything, and we are funding it to the tune of—I don't know—$250 to $300 million a year, and we are not doing anything. That is our concern.

Senator WEICKER. I love it when real people like yourself come down here to Washington, DC and tell us what is going on in that world there, vis-a-vis all these laws, as you say, and budgets and appropriations. It is just great. I think you have said it better than any of us can say it.

Senator DODD. Joe, on that last point, it has been mentioned by others that the primary responsibility—and let me ask you, Bob, the same question—the primary responsibility falls on the employer, and I think there is a general acceptance of that in OSHA, but picking up on your last comment and thought here, isn't it really a disadvantage to the employer who does really work at this—there is a cost involved in making sure that the construction is moving in a very sound and healthy and safe way for the people who are involved. Then there are obviously those who do not, who cut the corners. And as Bob pointed out, it is a business where the margins of profit are not necessarily significant—weather conditions, a whole variety of things can go wrong which can make it very difficult. There are more contractors who go belly-up, I presume, because of not bidding properly on something, or things happen that make it difficult for them to come out of it.

It seems to me how you are disadvantaged here is the employer who really does work at these things is obviously put at a financial disadvantage, particularly when you have almost got to have a permission slip to come on the site to inspect to see whether or not in fact the standards that we require under the law are being maintained.

What would be your comment on that?

Mr. EGAN. I kind of lost your question.

Senator DODD. Well, the financial disadvantage. I mean, the assumption is the burden is primarily the employer's.

Mr. EGAN. Let me tell you where the financial advantage is. The financial advantage is to keep everybody alive. That is the financial advantage to all of us, to this great Government of ours, to the employer, and to the employees' families. That is the advantage. If you want to look at it in dollars and cents, in the State of Connecticut, if an iron worker lost his life today on a construction accident, and let's say he was a younger guy, 24, 25 years old, and he had a wife of practically the same age, the Workers' Compensation Act would have to provide for his widow in the amount of $515 to $520 per week for the rest of her life, or until she remarried.

Now, if you want to run those numbers out to life expectancy, you are up over $1 million. So the financial advantage to all concerned is to keep it safe. It is only the fly-by-night contractor who doesn't want the law. It is only the fly-by-night contractor who doesn't care anything about the worker. It is the fly-by-night contractor who is looking for the fast buck, and he is in and he is out, and he could care less the next day.

What we are saying is we are in it for the long haul; we always have been, and we always will be. And what we want is the best protection that this United States can afford our people, at whatever the cost.

Senator DODD. Bob.

Mr. GEORGINE. I think, as Joe has very adequately said, the quickest and the easiest way to get a job done is to do it right in the first place and to have a safe working condition under which to work; your productivity is higher. Everything is better for the contractor when the men can work and they can work in a safe way. There isn't any question about that.

There are no economic disadvantages to doing the kinds of things that we are asking to do. We understand the construction industry. We know what the construction industry is. We have spent our lives in it. We are not asking for things that are going to increase the cost of a job and just make it impossible to build buildings. What we are asking for is the simple little things that really do not take a great deal of money, but take some care and some concern. It might slow down a little bit of the progress for a short period of time, but in the long run, it really increases productivity on the job.

So I do not think there is an economic disadvantage in doing the job safely.

When we talk about the accidents that we have had in construction and the deaths, they are real figures; they are not phony figures. They are there. That many people have died. That doesn't even take into account those who are going to die 20 years from now because of exposure to health hazards and to the toxics that you were talking about earlier, Senator Weicker. We do not even count those in there. They are not in there. And there are thousands and thousands who have died from asbestosis; you know what that is. There are other kinds of materials that affect construction workers.

So it is a highly dangerous business, and those of us who have spent our lives in it, those like Joe, who work in it every day and see it happening, have made recommendations. Those recommendations are not costly and they are not expensive if they are done, and done at the beginning of the job and held to.

Senator DODD. Thank you very much, both of you, for being here. Joe, we appreciate your coming down from Connecticut.

Mr. EGAN. Thanks for having us.

Mr. GEORGINE. Thank you, Senators.

Senator DODD. Our third panel is Dr. John Lyons, the Director of the National Engineering Laboratory of the National Bureau of Standards, Gaithersburg, MD; he will be accompanied by Dr. Charles G. Culver, Chief of the Structures Division of the Center for Building Technology, National Bureau of Standards, who I understand is principally responsible for the report; and Dr. Richard N. Wright, Director of the Center for Building Technology, National Bureau of Standards in Gaithersburg, MD.

We welcome you, Dr. Lyons, and we welcome the two gentlemen who are with you. We will be happy to include your testimony as part of the record, and these lights that blink on and off will sort of serve as a warning to you about trying to move things along.

STATEMENT OF DR. JOHN LYONS, DIRECTOR, NATIONAL ENGINEERING LABORATORY, NATIONAL BUREAU OF STANDARDS, GAITHERSBURG, MD, ACCOMPANIED BY DR. CHARLES G. CULVER, CHIEF, STRUCTURES DIVISION, CENTER FOR BUILDING TECHNOLOGY, NATIONAL BUREAU OF STANDARDS, AND DR. RICHARD N. WRIGHT, DIRECTOR, CENTER FOR BUILDING TECHNOLOGY

Dr. LYONS. Thank you, Mr. Chairman, and good afternoon.

My colleagues and I appreciate the opportunity to appear before the committee today to discuss our role in investigating this tragedy.

On my left is Dr. Culver and on my right, Dr. Wright.

The National Bureau of Standards has a long history of investigation of disasters of this type. Many of them have been structural failures; occasionally there are fire disasters that we investigate in our Center for Fire Research.

The Bureau's objective in such studies is always the same—that is, to determine the most probable technical or physical reason for such failures and not to place the blame.

A list of our other studies of disasters is really a summation of tragedy and multi-fatality collapses, and I have listed a few on a card here; some of them are in my testimony.

We hark back to a progressive collapse at the Skyline Plaza at Bailey's Crossroads in the Virginia suburbs of Washington in 1973. These gentlemen were involved in that investigation. We investigated the Willow Island Cooling Tower failure in 1978; the Cocoa Beach Condominium failure down in Florida in 1981; the infamous Hyatt Regency walkways collapse at Kansas City in 1981—the largest loss of life in a structural failure in this country ever; the Reilly Road Ramp collapse in East Chicago in 1982. On a slightly different note, we did the structural investigation of a new office building at the Embassy in Moscow in 1987. We are currently investigating the failure of the oil tank near Pittsburgh which dumped the diesel fuel down the Monongahela River. That investigation is just wrapping up this month.

A significant aspect of our work is that the results of these studies are made public. Unlike most litigation where results are often sealed, our results are published in reports. This is the L'Ambiance Plaza report, now available. And we make considerable effort to disseminate the lessons that we learn to the professions.

We received the request to look at the L'Ambiance Plaza disaster within 24 hours; OSHA called us and asked us to send a team to Bridgeport. Dr. Culver was named project leader and took a group to the site and was there within 24 hours.

We had available to us in our study—and I show this on the poster board—a number of sources of information. We of course had our own view of the disaster site. We reviewed interviews and were able to interview people who were at the site at the time. We were able to review the project documents; these were provided to us by the local authorities having jurisdiction. We received access to the debris and were able to bring some of it to Gaithersburg for laboratory tests of a variety of types.

We took subsurface data in regard to the question about the foundations, and we conducted our own analytical studies, including development of computer models, so that we could understand why the structure came down so fast.

We considered seven possible mechanisms for the failure—they are on the second poster. There was the question of lateral instability; the question of the individual columns and whether they were stable and resistant to buckling forces; there was the question of the floor slabs failing; the question of welds and whether they failed; the question of whether the foundation was adequate and

the differential settlement of the foundation; there was a question whether there was lateral soil pressure build-up, which could have tended to push the structure in one direction; and the question of whether there was a loss of support of the floor slab.

We released our report of findings on October 22 at a joint public briefing with OSHA. I have with me a videotape of those proceedings, which I will make available to the committee. We have also made available to the committee a number of copies of this report so that you have them available.

The most probable cause, our finding of what happened, we show on the third poster. That cause is failure of the lifting system at the connection between the lifting jack rod and the shearhead embedded in the floor slab. This is discussed in the executive summary in this report.

We also have schematic diagrams of that connection, and should the committee be interested we are prepared to put some more posters on during the question period.

We made a number of recommendations for the future. For the lift slab construction technique, we recommended an independent registered professional engineer competent to do so be appointed on all such projects to review and certify the lifting system. The Governor of Connecticut's Building Construction Advisory Commission extended this recommendation to all construction projects in the State of Connecticut above a certain threshold size. That Governor's commission also recommended that both the architect and the engineer of record be required to oversee implementation of their design.

Further, we have recommended to our own community the need to focus on structural integrity during construction. There are regulations that worry about structural integrity once built; not very much about integrity during construction.

Finally, we would like to see much more attention by the design community to the details of connections in construction. The Hyatt Regency walkway failure, for example, was another connection failure, and we don't think enough attention has been paid to connections.

I re-read this report last night, Mr. Chairman—not all of it, but the essence of it—and I understand the feelings of those people who disagree with our findings, but I find, as I have before, that if you read this carefully and look at the computer simulations, we do understand what happened, and we believe that this report describes it.

Thank you.

[The prepared statement of Dr. Lyons, with an attachment, follows:]

STATEMENT OF DR. JOHN W. LYONS, DIRECTOR
NATIONAL ENGINEERING LABORATORY
NATIONAL BUREAU OF STANDARDS

BEFORE THE
UNITED STATES SENATE COMMITTEE
ON
LABOR AND HUMAN RESOURCES

April 26, 1988

Mr. Chairman, I appreciate the opportunity to testify on behalf of the National Bureau of Standards (NBS) to describe our role in the investigation of the collapse of the L'Ambiance Plaza Building in Bridgeport, Connecticut and discuss opportunities for improving construction safety based on lessons learned from this tragedy. I am accompanied by Dr. Charles G. Culver Chief of the Structures Division who led the investigation for NBS.

NBS ROLE IN FAILURE INVESTIGATIONS

NBS has a long history of investigating structural failures. The investigations focus on determining the most probable technical causes of the failure. Since NBS has no regulatory authority and does not promulgate building standards or codes, we are often viewed as a neutral "third party" which can conduct independent investigations. Through the Center for Building Technology (CBT), NBS develops the tools and technology to test and improve the performance of structures.

Requests for assistance in a failure investigation can come from other Federal agencies, State and local governments, or other organizations. Many investigations conducted by NBS have been carried out for the Occupational Safety and Health Administration (OSHA). Under the terms of an Interagency Agreement established between OSHA and NBS in 1973 and updated in 1983, NBS conducts scientific and technical investigations in connection with failures under the jurisdiction of OSHA. Investigations have also been conducted at the request of other Federal agencies, local governments and the United States Congress.

NBS also may initiate an investigation of a significant failure after consulting with local authorities. The National Bureau of Standards Authorization Act for Fiscal Year 1986, Sec. 7 provides for structural failure investigations:

> "The National Bureau of Standards, on its own initiative but only after consultation with local authorities, may initiate and conduct investigations to determine the causes of structural failures in structures which are used or occupied by the general public. No part of any report resulting from such investigations shall be admitted as evidence or used in any suit or action for damages arising out of any matter mentioned in such report."

NBS worked with the American Society of Civil Engineers (ASCE) and the National Conference of States on Building Codes and Standards (NCSBCS), a group representing State building officials throughout the U.S., and developed a model agreement to implement this authority. This model agreement addresses the issue of CBT access to the failure site, debris, and pertinent documents. The agreement was made available by NCSBCS to State officials for their use in requesting NBS assistance.

Investigations that NBS has conducted include the 1981 collapse of walkways in the Hyatt Regency Hotel in Kansas City, Missouri, a 1978 construction failure of a reinforced concrete cooling tower at Willow Island, West Virginia and the 1987 L'Ambiance Plaza building collapse. In addition, NBS in 1986 investigated the structural soundness of the U.S. Embassy office building under construction in Moscow. We are currently investigating the cause of the collapse of the Ashland Oil Storage Tank near Pittsburgh, Pennsylvania at the request of Congressman Walgren from Pittsburgh and in cooperation with the Commonwealth of Pennsylvania.

Typically, NBS researchers conduct an extensive field investigation at the site of a failure to determine conditions before and after the failure. Documents such as drawings, specifications, and inspection reports are reviewed to gain information about the structure as it was designed.

Extensive laboratory tests on materials are conducted to determine physical properties. NBS may fabricate mockups or replicas of parts of the structure and test these also. In addition to laboratory tests, NBS researchers use computers to model a structure and analyze and predict its structural performance.

Results obtained by NBS from these failure investigations are made available to the engineering profession and the general public. Reports of these investigations have been made public promptly and widely disseminated. A partial list of NBS reports and articles based on these reports is attached to this testimony. CBT is working closely with the engineering profession to disseminate information on structural failures through participation in the Architectural and Engineering Performance Information Center (AEPIC) at the University of Maryland and American Society of Civil Engineers Technical Council on Forensic Engineering.

L'AMBIANCE PLAZA FAILURE INVESTIGATION

On April 24, 1987, less than 24 hours after the failure, OSHA requested technical assistance from NBS to determine the most probable physical cause of the collapse. Rapid response to structural failures is necessary in order to collect important physical data which may be lost during recovery operations. A team of engineers led by Dr. Culver from NBS arrived on the site of the collapse at 6:00 pm that same day.

Regional and area officers of the Occupational Safety and Health Administration provided continued support throughout the investigation. They obtained access to the site for the NBS team, provided logistical support in collecting evidence from the debris and conducted interviews of survivors and eyewitnesses. The Department of Public Safety of the State of Connecticut provided copies of the documents relating to the construction including construction logs, testing reports, design drawings and shop drawings. All this information was essential to the investigation and was used together with other data obtained by NBS in determining the cause of the failure.

The NBS investigation commenced immediately upon arrival of NBS personnel on the site on April 24, 1987. Data were collected and assessments made of the nature of the failure of various elements of the structure during and subsequent to the rescue efforts. In addition to observations from the on-site inspection, the NBS team in carrying out its investigation used:

(1) information on the collapse obtained from interviews of survivors and eyewitnesses
(2) project documentation including design specifications, plans, shop drawings, construction records, testing laboratory reports and project correspondence
(3) laboratory tests of samples removed from the collapsed structure
(4) data obtained from a subsurface investigation at the site after the collapse, and
(5) analytical studies, including computer analyses.

A number of possible mechanisms which may have initiated the collapse were considered in carrying out the investigation. These included: (1) lateral instability (2) individual column instability, (3) floor slab failure, (4) weld failure, (5) foundation failure, (6) failure due to lateral soil pressure and (7) loss of support of floor slab. Field observations eyewitness accounts, laboratory tests and analytical studies were used to assess the likelihood of each failure mechanism.

Results from the NBS investigation were documented in a report provided to OSHA and released to the public at a press conference on October 22, 1987. A copy of the NBS investigation report is attached to this testimony. We believe it is important that all information on the causes of the failure including that from other investigations also be made available to the engineering profession and the public.

IMPLICATIONS FOR ENGINEERING PRACTICE

The tragic experience of L'Ambiance Plaza provides an opportunity to develop building practices that will help prevent recurrence of similar failures and improve construction safety. For this reason, it is important

to disseminate information on the cause of the failure. This information gives the building community the knowledge it needs to modify current practice, where necessary. The information also aids in identifying where knowledge of building performance is inadequate and research is needed to improve building practices.

On October 22, 1987, the NBS report was released to the public at a press conference scheduled to present the findings of the investigation. Since then, nearly 2000 copies of the NBS failure investigation report have been distributed to the building community. Over 80 copies of a video tape of the press conference presentation of the results of the investigation have also been distributed to design professionals, libraries, universities, and construction industry organizations. Copies of the NBS report were provided to the Governor's Building Construction Advisory Committee created by the Governor of Connecticut to make recommendations as to how future construction failures might be prevented from occurring in Connecticut. The Committee thoroughly reviewed the NBS report in the process of developing their recommendations issued on January 15, 1988.

NBS made several recommendations to improve construction safety when the L'Ambiance Plaza report was released on October 22, 1988. For lift slab construction, it was recommended that an independent registered professional engineer be engaged to review and certify the adequacy of the lifting operation including the loads to be lifted, the design of the components of the lifting system and the lifting operation. The Connecticut Governor's Building Construction Advisory Committee extended this recommendation to all building in the State of Connecticut above a threshold size requiring municipalities to assign an independent engineering consultant to review the plans of the project and conduct field inspections as necessary.

The Governor's Committee also recommended that on all buildings requiring a design professional's seal to obtain a building permit, the architect and engineer of record should be required to oversee the implementation of his or her design through reviewing shop drawings, reviewing daily construction logs and observing construction. The continued involvement of the engineer

of record throughout the design and construction process is being addressed by the American Society of Civil Engineers.

NBS also pointed out the need to pay more attention to the structural integrity of buildings during the construction process. Special care must be given so that structures can withstand the load experienced during construction, and so that the failure of a single component does not bring down the entire structure through a progressive collapse, as was the case with L'Ambiance Plaza. Activities are underway to implement this recommendation. The American Society of Civil Engineers has established a committee to develop a standard for Design Loads on Structures During Construction. NBS staff will serve on this committee and chair a subcommittee charged with developing requirements relating to structural integrity.

The National Safety Council recently issued an interpretation of the requirements for lift slab construction contained in the American National Standard for Construction and Demolition Operations, ANSI A10.9. This interpretation addresses safety requirements for lift slab construction. NBS participates in the American National Standards Committee responsible for this Standard.

The initial cause of the L'Ambiance Plaza collapse was failure of a connection detail. Connection failures have contributed to other structural failures including the Kansas City Hyatt Regency hotel collapse. Connections play a key role in insuring adequate performance in all structures. In many cases, information for structural connections is not available for safe and economical design without laboratory tests to verify capacity. Laboratory and analytical research is needed to improve information for the safe and economical design of structural connections.

Thank you Mr. Chairman for the opportunity to present this statement. Dr. Culver and I would be pleased to answer any questions the Committee may have about our failure investigation.

7

RESULTS OF NBS FAILURE INVESTIGATIONS

BUILDING FAILURE INVESTIGATIONS - NBS REPORTS

- Conducted construction failure investigations at the request of the Occupational Safety and Health Administration.

Leyendecker, E.V. and Fattal, S.G., BSS 94, "Investigation of the Skyline Plaza Collapse in Fairfax County, Virginia," February 1977 (OSHA).

Lew, H.S., et al., NBSIR 78-1578, "Investigation of Construction Failure of Reinforced Concrete Cooling Tower at Willow Island, West Virginia," November 1979 (OSHA).

Lew, H.S., et al., NBSIR 80-1964, "Recommended Guidelines for Safety Inspection of Construction of Concrete Cooling Towers," January 1980 (OSHA).

Lew, H.S., et al., NBSIR 80-2010, "Analysis of Construction Conditions Affecting the Structural Response of the Cooling Tower at Willow Island, West Virginia," July 1980 (OSHA).

Redfield, Tobiasson, and Colbeck, Prepared for NBS by CRREL, "Estimated Snow, Ice, and Rain Load Prior to the Collapse of the Hartford Civic Center Arena Roof," April 1979 (OSHA).

Lew, H.S., et al., NBSIR 81-2374, "Investigation of Construction Failure of Harbour Cay Condominium in Cocoa Beach, Florida," September 1981 (OSHA).

Carino, N. J., et al., "Investigation of Construction Failure of the Riley Road Interchange Ramp, East Chicago, Indiana," October 1982 (OSHA).

Culver, Charles, et al., NBSIR 87-3640, "Investigation of L'Ambiance Plaza Building Collapse in Bridgeport, Connecticut," September 1987 (OSHA).

- Conducted an investigation into the failure of the Kansas City Hyatt Regency Walkways Collapse at the request of Mayor Berkley, Senator Eagleton and Danforth and Congressman Bolling.

Marshall, R. D., et al., NBSIR 82-2465, "Investigation of the Kansas City Hyatt Regency Walkways Collapse," February 1982 (NBS).

ARTICLES IN TRADE AND PROFESSIONAL PRESS

Leyendecker, E. V., "A Synopsis of the Skyline Plaza Collapse in Fairfax County, Virginia," Proceedings, Symposium on Progressive Collapse, McGill Univer., Montreal, Quebec (03/77).

Lew, H.S., Pfrang, E.O., "Criteria for Assessing Safety During Erection of Concrete Shell Structures," Proceedings, World Congress on Shell and spatial Structures 20th Anniversary of the IASS, IASS, Madrid, Spain (09/79).

Lew, H.S., "Investigation of Construction Failure of a Cooling Tower," Proceedings of the Canadian Structural Concrete Conference, CSCE, Toronto, Canada (09/81).

Pfrang, E.O., Marshall, R.D., "Collapse of the Kansas City Hyatt Regency Walkways," Civil Engineering, Vol. 52, No. 7, ASCE, New York, NY (07/82).

Lew, H.S., Carino, N.J., Fattal, S.G., "Cause of the Condominium Collapse in Cocoa Beach, FL.," Concrete International, Design and Construction, Vol. 4, No. 8, pp. 64-73, ACI Detroit, MI (08/82).

Carino, N.J., Woodward, K.A., Leyendecker, E.V., Fattal, S.G., "A Review of the Skyline Plaza Collapse," Concrete International, Vol. 5, No. 7, pp. 35-42, ACI Detroit, MI (07/83).

Carino, N.J., Lew, H.S., Stone, W.C., "Investigation of East Chicago Ramp Collapse," ASCE Journal of Construction Engineering and Management Vol. 110, No. 1, pp. 1-18, ASCE, New York, NY (01/84).

Scribner, C., Culver, C.G., "Investigation of the Collapse of L'Ambiance Plaza," ASCE Journal of Performance of Constructed Facilities, ASCE, New York, NY (05/88).

ELEMENTS OF INVESTIGATION

- Survey collapsed structure
- Review plans, specifications, construction documents
- Eyewitness interviews
- Conduct laboratory tests
  - Construction materials
  - Lifting system components
- Conduct subsurface investigation
  - Foundations
  - Retaining wall
- Computer analysis of structure

FAILURE MECHANISMS ANALYZED

- Lateral instability
- Individual column instability
- Floor slab failure
- Weld failure
- Foundation failure
- Failure due to lateral soil pressure
- Loss of support of floor slab

The Most Probable Cause of the Collapse was the Failure of a Key Component of the System for Lifting the Concrete Floor Slabs

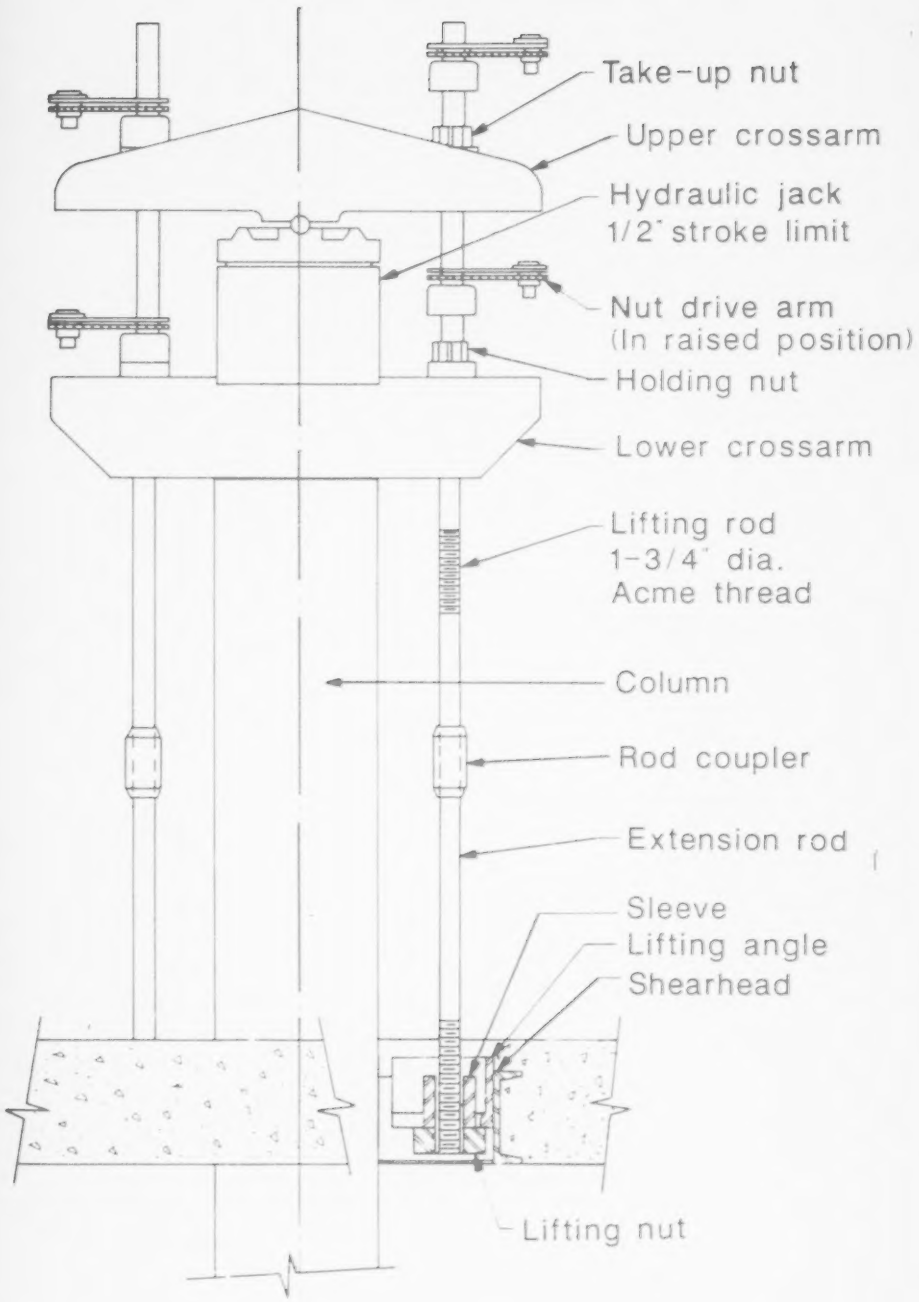
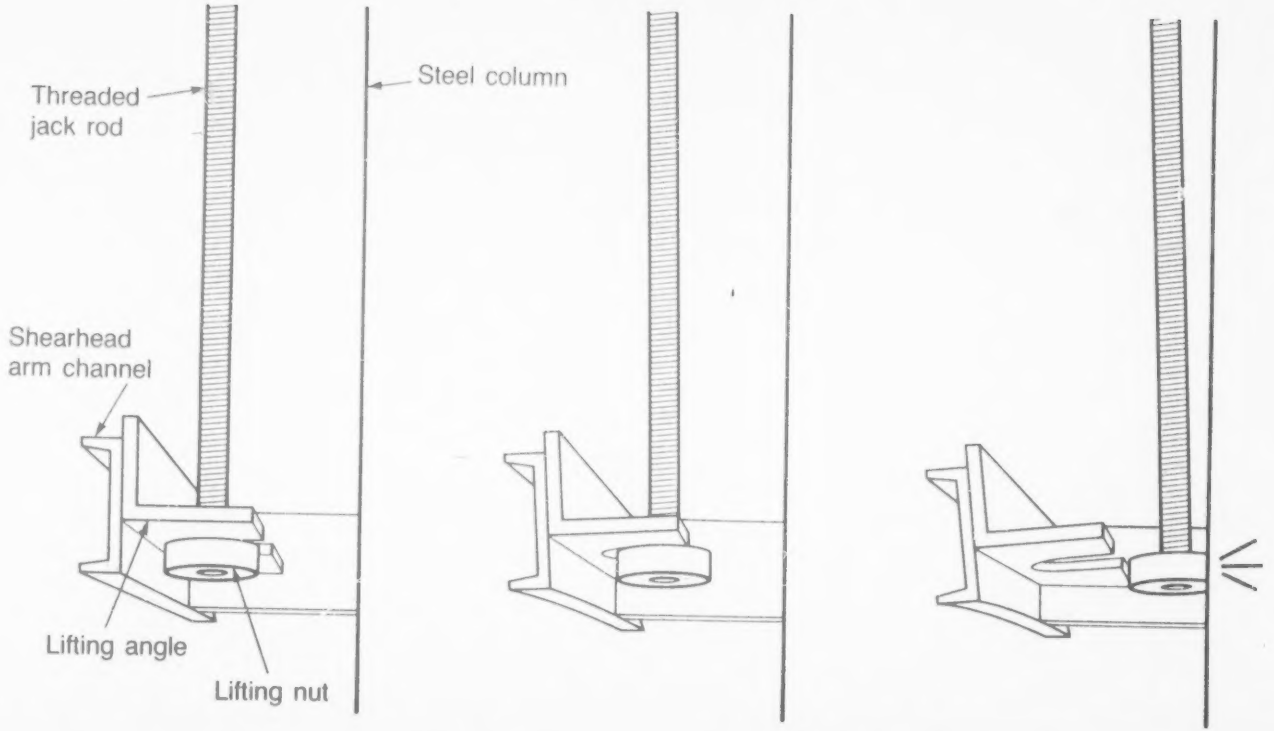

Take-up nut
Upper crossarm
Hydraulic jack
1/2" stroke limit
Nut drive arm
(In raised position)
Holding nut
Lower crossarm
Lifting rod
1-3/4" dia.
Acme thread
Column
Rod coupler
Extension rod
Sleeve
Lifting angle
Shearhead
Lifting nut

DIAGRAM OF FAILURE MECHANISM
(Cutaway)



Senator DODD. Could you tell me, just so I am clear—I do not want to be presumptuous. Is it you, Dr. Culver, who actually prepared the report?

Dr. CULVER. Yes, together with a staff of six other individuals from NBS, and it was then thoroughly reviewed by others at NBS.

Senator DODD. But it was primarily your responsibility?

Dr. CULVER. Yes, sir.

Senator DODD. Dr. Wright, were you involved as well?

Dr. WRIGHT. I am the Director of the Center for Building Technology and was one of those reviewing the report.

Senator DODD. One other question that has been raised by a number of people is the fact that this report was completed, and as far as I understand, reviewed under normal procedures and ready for release on roughly the 20th or 21st of September, but it was delayed a month in coming out, arguably because of some paperwork.

Given the fact that this report focuses particular attention on lift slab construction methods and the fact that they are ongoing around the country, what was the reason for that month delay? How do you explain that or justify it?

Dr. LYONS. The report was ready a month ahead of time, and it was presented to OSHA at that time. In fact, OSHA was aware of our progress as we went through this. The delay, I think Mr. Pendergrass can explain to you. We were concerned during that delay that the necessary warnings were going out to the community—in fact, we talked with OSHA about that, and I was satisfied that they were taking interim steps during that 1-month period to notify the community at-large as to what we had found.

Senator DODD. You were notifying the community?

Dr. LYONS. OSHA told me they were taking care of that at that time, not waiting.

Senator DODD. Well, were they, as far as you know?

Dr. LYONS. As far as we know, they were, yes.

Senator DODD. And whose responsibility is it to release the report—yours or OSHA's?

Dr. LYONS. OSHA's. OSHA paid for this study. They paid us $390,000 for the study, and part of the agreement we have with OSHA is that they take care of the legal citations before release, and actually, they control the release of our report.

Senator DODD. Is this normal operating procedure to take that long?

Dr. LYONS. A month?

Senator DODD. Yes.

Dr. LYONS. I think it is typical. There are certain things they have to do legally once they receive our report.

Senator DODD. Well, there are some questions, as Senator Weicker pointed out, as to the cause for this particular accident, which if you were here, you heard Mr. Egan raise.

Let me turn to Senator Weicker to proceed with a line of questioning about the shearhead question, because that is pivotal and very important. As you know, there have been a number of questions raised by many people.

Senator WEICKER. Thank you very much, Mr. Chairman.

It is true that your report has come increasingly under fire for its conclusion that the failure of a single shearhead was the likely

cause of the accident and also for its failure to fully explain why the entire building collapsed within about 10 seconds.

For example, an engineering consultant hired by the Hartford Courant, Mr. Antranig Ouzoonian, has questioned your finding that the failure of a single shearhead could have caused the entire collapse.

Second, I have a letter here from Mario Suarez, an engineering consultant hired by NBS to study the layout of L'Ambiance. In this letter, Mr. Suarez argues that the Bureau's analysis of post-tensioning, a critical factor in determining the strength of the building foundation, was inadequate.

Finally, I note that Texstar, one of the companies fined by OSHA, who submitted testimony for the record, also contests NBS' finding regarding the cause of the collapse.

I think this might be as good a time as any for you to respond to these various charges, and I would hope the Chair would give you a few minutes here, with whatever diagrams you have, to do so, because certainly there is a lot of question out there as to this aspect of your report.

Dr. LYONS. We are pleased to take this opportunity to respond to those charges. As I said before, I re-read this document last night, and I remain convinced as to its credibility.

Dr. Culver is prepared, I think, to discuss a little bit about this connection. I just want to say right at the outset, Mr. Chairman, that when Dr. Culver and Dr. Wright presented to me the design detail of this connection, I was horrified. I thought that it was an accident waiting to happen; the minute I saw the open "U" within the lifting angle, it was clear to me that the lifting rod could kick out with the slightest disturbance. And indeed, we then went ahead and duplicated that in the laboratory before we decided on that as the cause.

Senator WEICKER. Just to stop you there for one minute, when you saw that, it automatically raised red flags, right?

Dr. LYONS. To me it did, yes, sir.

Senator WEICKER. Would this have been visible, or would it have been something that with due inspection—nothing extraordinary, but due inspection—would have been visible to an OSHA inspector?

Dr. LYONS. Certainly. If you look into a shearhead, there it is.

Senator WEICKER. Well, that's a hell of a commentary if it is something that all of a sudden makes the red flag spring up as far as you are concerned, but here we are supposed to have a project being monitored by OSHA.

Dr. LYONS. One of the things we have uncovered in this investigation is that as far as we can tell, there aren't any standards or regulations that cover the design of such devices useful only during construction, which is why we have recommended that the profession ought to pay attention to those details.

Senator DODD. Well, how about going a step further? I appreciate that, but in your professional capacity, were you somewhat surprised in light of the conclusions of your report that OSHA did not impose a moratorium nationwide on lift slab construction in light of this—if in fact this single shearhead could have created that kind of a chain reaction and the resulting devastation, and naked

to the eye upon inspection, shouldn't that have been at least a moratorium for a period of time to inspect other lift slab construction sites around the country?

Dr. LYONS. Do you want to comment on that, Charlie?

Dr. CULVER. No comment.

Dr. LYONS. Well, we didn't have a particular responsibility there, so that——

Senator DODD. I know you don't. I understand that. But you are professionals in this business.

Dr. LYONS. But we called OSHA and said that we thought in light of our conclusions, there ought to be certain information passed out to the community, or steps taken, and they indicated to me that they had already investigated the other type of lift slab construction and that this particular problem applied only to this type.

Senator DODD. But would you have had a moratorium on this type?

Dr. LYONS. I?

Senator DODD. Yes.

Dr. LYONS. It wasn't my decision.

Senator DODD. Well, let's assume it was for a second. We need help up here.

Dr. LYONS. Yes, sir; I would have.

Senator DODD. You would have without any question.

How about you, Dr. Culver?

Dr. CULVER. Yes, sir; I would have.

Senator DODD. Dr. Wright?

Dr. WRIGHT. (Nodding.)

Senator DODD. Why don't you go ahead?

Dr. CULVER. Senator, before I start with the detailed specifics, I think there are two points I would like to make about our investigation and the conclusions we reached. The first is that the conclusion we reached is based on a variety and a combination of all sorts of information. These include laboratory tests, eyewitness interviews, data collected at the site. It is not one, single factor; it is a combination of everything coming together.

Senator DODD. I think you laid that out in your first chart up there.

Dr. CULVER. The second point I would like to make is we are well aware of the criticism and the comments that have been made about our investigation. The point is we have documented thoroughly for the engineering profession to judge our investigation. It is quite honestly to me personally disturbing that the comments that have been made, the criticisms that have been made, have not been backed with factual engineering data. One cannot comment and discuss allegations.

With that, I would like to explain to you how we feel this thing came down and how it came down in ten seconds.

Senator WEICKER. That is exactly why I posed the question, to give you this opportunity to further elucidate on your report.

Senator DODD. And that is a fair comment, I would point out, as well.

Dr. CULVER. I will try to keep this brief, but what I would like to do is set the stage for the accident.

This poster shows the status of the construction at the time of the failure; this is the west building, and this is the building they were working on.

There were five slabs of concrete here, in the air above this space where they were working. Each one of those slabs weighed 600,000 pounds. You had 3 million pounds of concrete in this location.

If you stood at this point and you dropped something over the side, it would take 2¼ seconds due to gravity for that piece to get to the ground.

Now let me talk about how we feel this building came apart.

At the top of each one of those columns that you saw——

Senator DODD. Excuse me. You may want to bring that chart back up again.

Senator WEICKER. Is the model here to scale as far as size, weight, et cetera?

Dr. CULVER. This is a geometric scale model. It is not a scale model for weight. It is the model that we prepared for OSHA; OSHA has it now. My understanding is that it is in their training center in Chicago, but OSHA can better answer where it is.

NBS built it as a geometric scale model of the building at the time of collapse to illustrate the condition at the time of collapse.

Senator WEICKER. I have been notified that shortly after the building of the scale model, the model collapsed. Is that correct?

Dr. CULVER. There was an accident in transporting that model. It was very flexible, and in transporting the model from Gaithersburg to Washington, it failed. We took it back to the Bureau, rebuilt it, and transported it back to OSHA again. This is the model we used during the press conference.

Senator DODD. Did something happen on the trip?

Dr. CULVER. Yes. The model was, however, and is, as the structure was, a very flexible structure.

At the top of each one of these columns in the building was a hydraulic jack. From each jack, there were two jack rods that came down to a package of three 7-inch-thick concrete slabs. The jack rods were connected to a shearhead, a device, a piece of steel that was embedded in the concrete slab. The jack rod was connected to the shearhead. I will show you the detail of the connection. The hydraulic jack was operated, and that is what lifted the slabs up to their proper positions, and then they were wedged off.

This is the lift slab method—all these slabs—I don't want to go into a lot of detail—but all these slabs initially were poured on the ground, and then they were lifted into place. This is the lifting mechanism that does that—a jack on top of each column. The majority of the jacks were 75-ton jacks, which means they were capable of lifting 150,000 pounds. On each of the two towers, there were four special jacks, super jacks, which were capable of lifting twice that much, or 300,000 pounds.

OK. We believe the initiation of the failure occurred at this particular location—the connection between the lifting rod and the shearhead. We have a schematic representation of that on this poster. The connection detail, if you take the concrete slab away and look at that piece of steel and look at only a portion of it, you have a channel section here, you have an angle which is welded to it, you have a jack rod that comes down here, you have a lifting

nut which screws on the bottom of it, and in that lifting angle to get that rod in there, you have a U-shaped cutout. This is the point that Dr. Lyons was saying when he saw this U-shaped cut in here, and the fact that there was nothing across here, it concerned him.

The way we believe this failed was that this lifting rod, which was carrying the load, caused this portion of the shearhead, the channel section and the lifting angle, to rotate, to twist, to deform. It deformed enough so that this lifting nut and this lifting rod would slip out from that opening. It slipped out, it hit the column; it then dropped—the shearhead was no longer supported at that particular point. That was the initiation of the failure.

We were able to duplicate this situation in the laboratory. We found physical evidence at the site of this mechanism, that this actually did occur at the site. Once you lost one shearhead, you propagated a chain reaction. And again, we have physical evidence of that chain reaction propagating.

Eventually, after that reaction propagated, you had 3 million pounds of concrete in the air which was not supported. I think you can draw your own conclusions as to what happened next.

Again, we did go into detail in our report as to what did happen next. If you want me to go through that, I can. It is thoroughly documented, based on eyewitness testimony and physical evidence. We thoroughly investigated the foundation and we documented that in the report.

Senator WEICKER. Why, just out of curiosity—and this is speculation on your part—why would you leave the open end to the "U" there? Why wouldn't there be some sort of——

Dr. CULVER. Just as it is easy for it to come out, it is easy for it to go in. When you are building the thing, if you want to put it in quickly, it is easier to put something in like this, because you don't have a closed hole, than to put something in like that. Now, I admit you could put a closure across there, and that is an extra operation.

Now, this is my guess. I did not design this, so I cannot answer that.

Senator WEICKER. Fine.

Senator DODD. You will forgive that some of these questions are real layman's questions, but if the hydraulics or the lifts were not synchronized perfectly, would you get any kind of a disorientation, that is, one side moving up more quickly than another, and would that create that kind of situation—or, was that impossible to happen? Were they operated in such a way that you did not operate them separately, but they operated all out of one system?

Dr. CULVER. These lifting jacks in this particular job had a common console, which means they are all operating together. There is a control system there which, if they get out of sync, if two locations develop a differential of at least a half-an-inch, they will shut down. So you cannot get more than half-an-inch out of level, if you will, with the system, or it will shut down.

Senator DODD. Did you test the integrity of the concrete slabs themselves?

Dr. CULVER. Yes, we did. We took samples from the concrete that was in the slabs, from the concrete that was in the shearwalls of the buildings. We ran numerous tests of that concrete. There was

concern as to possible freezing, that the concrete had possibly frozen because it was poured back in the late fall or early winter. Again, those results are presented in the report. We did not find any indication that the concrete froze. We also found that the strength of the concrete met the specifications called for on the job.

Senator DODD. It did. Are there other possibilities? I understand this is your conclusion, but like in any conclusion, there are other options, things that may have occurred, although you have been drawn to this one. What would be some of the other options that might have caused the collapse?

Dr. CULVER. I think if we go back to that poster that Dr. Lyons discussed, there were seven possible failure mechanisms that we looked at. Each one of them could have caused the building to fail. For example, lateral instability—the building just like the model was flexible—the building could have fallen over to the side. It was very flimsy. The location of the shearwalls, as Mr. Egan mentioned earlier, were not in accordance with specifications.

So, yes, there are other possibilities. Those are the ones that Dr. Lyons mentioned, that we talk about in our report. We looked at each one of those, and our rationale for eliminating them is in the report.

Senator DODD. This is your conclusion.

Dr. CULVER. This is the conclusion of the National Bureau of Standards.

Senator WEICKER. Thank you very much.

Senator DODD. Thank you very much, and thank you, Dr. Lyons. I appreciate your candor. I realize it is not your job to do those things. But you must appreciate as well that Senator Weicker and I are not trained engineers, and so we rely upon you, as our colleagues do, and particularly your organization, for your comments and opinions. They are very helpful to us. We are grateful to you for being here and laying it out for us.

We may have some written questions for you as staff has further opportunity to go over this, and I presume it will be appropriate with you to submit them to you in writing.

Thank you very much.

Our next panel of witnesses includes Nancy Daddona, of Prospect, CT, and Mary Beth Adonna, of Oakville, CT, accompanied by their counsel, Mr. Charles T. Alfano, from Suffield, CT.

We welcome both of you here today. Senator Weicker and I spoke privately with you before the hearing began, and we are grateful to you for being here, and I am quite confident that the members of the other families and other spouses that you represent here today are also very grateful to you for being here. It is not easy. It has been a tough year, particularly with the memories rekindled with the ceremonies of last weekend, it must be pretty poignant for you.

So I want you to know, and again, I know I am speaking for our colleagues who are not here today, how deeply appreciative we are for both of you coming down to Washington today to be a part of this hearing. You are going to help us in that regard and help others so there do not have to be two witnesses like yourselves ever having to appear before a committee like this as a result of this

kind of tragedy. So again, my thanks to both of you, and Charlie, thanks to you for coming along with these two women.

Why don't we begin with you, Mrs. Daddona, since I introduced you first.

STATEMENTS OF NANCY DADDONA, PROSPECT, CT, AND MARY BETH ADONNA, OAKVILLE, CT, ACCOMPANIED BY CHARLES T. ALFANO, ESQUIRE, SUFFIELD, CT

Mrs. DADDONA. In April of 1987, my husband, Bill, and I, with our 8-year-old son, Anthony, and our 6-year-old daughter, Lori, moved into our dream home in Prospect, CT.

Bill and I had been married for 8½ years. He worked very hard. He was a labor foreman at Waterbury Foundation. Our future looked bright. Our children were doing well in school, and Bill was very popular at work, both with his owners and his colaborers. We had a lot of work to do with our home, but we were looking forward to it.

On April 23, 1987, our dream was shattered. Bill left for work, and he never came home. The collapse of L'Ambiance Plaza killed him. I now live in our unfinished dream home with my two children, who miss him very much.

Now I must be both mother and father to my two children. Nothing anyone can do will ever relieve this pain. I have to pay for our mortgage, suddenly left without my husband's income. I recently lost my job, and we are living on $366 a week provided by workmen's compensation.

We might receive very little from our lawsuit against the parties who made this building collapse where 28 people died and 14 were seriously injured. Texstar Construction Co. was found to be primarily responsible by OSHA. They only have $3 million in insurance. Their $3 million additional net worth will be almost entirely taken by the proposed fines by OSHA.

TPMI, the general contractor, has only $1 million in insurance. Their entire worth would be taken by the proposed OSHA fines.

OSHA did nothing to prevent the collapse. A similar incident occurred in Stamford, less than 15 miles away, involving a partial collapse of a lift slab building during construction. Engineers have told me that the defect in the system, too much weight on the lifting collars, would have been obvious to anyone reviewing the plans. The Connecticut Governor's Task Force which reviewed the daily logs called L'Ambiance Plaza "a disaster waiting to happen."

Why didn't OSHA find out about the collapse in Stamford? In this age of computers, is it too much to ask that they keep a record of significant injuries and problems? Why didn't OSHA have an engineer review the plans or have their inspectors check the logs? Why is OSHA trying to take the money that I need to support my children?

I ask all of you to support Senator Weicker's and Senator Dodd's bill which would put the funds collected by OSHA into a trust for the victims of L'Ambiance Plaza.

Please do not let OSHA victimize us again. I ask that you strengthen the review and oversight abilities of OSHA so that other families will never have to suffer as I have.

Senator DODD. Thank you very much, Mrs. Daddona.

Mrs. Adonna.

Mrs. ADONNA. Good afternoon. My name is Mary Beth Adonna. I was married to Michael Adonna for 15 years. Mike and I have three daughters—Catherine, age 15; Nicole, age 12, and Christine, age 4.

April 23, 1987 began like any other day for my family. Mike left for work at 5:30 a.m. He had recently given up his own business, hoping to spend more time with his family, and was working for Waterbury Foundation at the L'Ambiance Plaza construction site in Bridgeport, CT. That morning I said goodbye to my husband, never dreaming it was the last time I would see him. I expected him to come home at 5 p.m., like he always did. But Mike never came home again.

I first heard about the collapse on the afternoon of the 23rd from my cousin, who had seen it on TV. I called my husband's employer and was told that Mike was not at that construction site. I later learned that Mike was in fact at the site. I was told to go to Bridgeport and wait for news. I waited in Bridgeport overnight. The following day, I was told that workers had found Mike's body. We later learned that it was not Mike, but another victim. I never gave up hope during that time that Mike was alive. Mike's body was actually found days later and was positively identified one week after the collapse.

I am 37 years old, and I am now a widow. I have three daughters who I must support and act as both mother and father to. In today's complicated world, that is not easy.

Not a day goes by that I don't think about Mike. The sadness and loneliness are at times overwhelming. I cannot explain to my children why this happened to us. My 4-year-old daughter doesn't understand where here father is and why he is not with us. I don't understand it myself.

What I do understand is that on April 22, 1987, I had a husband who loved me and our children. He loved life and was excited about his new career and the time he would have with us.

The irony is that as a result of that career change, he is no longer with us. On April 23, 1987, everything was taken away. In spring, when everything used to seem new and fresh, and evidence of life is everywhere, my husband's life was ended. With that, a portion of me died.

No amount of money can fill the void in our lives, and no one can bring back Mike or any other victim. But we need help, and we deserve help.

OSHA investigated the collapse of L'Ambiance Plaza and imposed fines. It seems ironic to me that OSHA was not around to protect the workers at the L'Ambiance Plaza, that it was unable to prevent this tragedy. Now OSHA wants to collect and keep $5 million in fines. In doing so, OSHA will deprive the victims of this tragedy of compensation they deserve. I always thought OSHA was supposed to work to protect workers, not work against them.

To me, the question seems simple. Ask yourselves who need and deserves this money more—OSHA or the injured men and surviving families. I hope you agree with me that the injured men, the

widows and fatherless children are more in need, more deserving, than OSHA.

Thank you.

Senator DODD. Thank you, Mrs. Adonna.

Thank you very much for your very compelling and moving testimony.

I would just ask a question which you have probably been asked by others, but let me ask it here as well. In either of your cases, did your husbands express any concerns at all to you about the safety of the construction site?

Mrs. DADDONA. Yes, he did—nothing that I could pinpoint—but he didn't like things that were going on down in Bridgeport.

Mrs. ADONNA. Michael also worked at Bridgeport. They worked at various jobs throughout the week. He did go out to Bridgeport on Tuesday and came home in a terrible mood and didn't want to talk about what was going on at Bridgeport. He said it was just because of heights, and he was afraid of heights.

On Wednesday, he went to work at another construction site, and he came home in a much better mood—which is why Thursday, when I called, and they told me he was not there, I really thought he was at another construction site—he did not like working at Bridgeport.

Senator DODD. Senator Weicker.

Senator WEICKER. I have no questions. I think it takes a lot of courage to revisit this. You know, as much as we talk about the law, you are the ones who are still living with it daily, and something has got to be made right here, in a personal sense, not in a governmental policy sense, but in a personal sense. I know that Senator Dodd and I are trying. Who is to say that it is necessarily right—but I think you are worth a lot more trying for, I'll put it this way, than a lot of the other stuff I see around this town. So we'll keep trying.

Senator DODD. Thank you both for coming down. We really appreciate it very, very much.

If you need anything—are you both heading back to Connecticut——

Mrs. ADONNA. Yes.

Mrs. DADDONA. Yes.

Senator DODD. If you need anything before you go, both of our offices are ready to help you in any way. Thanks for coming down.

Charlie, thank you for coming along as well.

Mr. ALFANO. Thank you, Senator.

Senator DODD. Our last witness today is John A. Pendergrass, the Assistant Secretary for Occupational Safety and Health. Mr. Pendergrass, we welcome you to the committee.

We have used our blinking lights here, and we are asking our witnesses to try and keep their remarks to about 5 minutes, and your full testimony will be included in the record. We have your statement here, and it will be made a part of the record.

STATEMENT OF JOHN A. PENDERGRASS, ASSISTANT SECRETARY OF LABOR FOR OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION, U.S. DEPARTMENT OF LABOR, WASHINGTON, DC

Mr. PENDERGRASS. Yes, Senator. You have the statement. I have a summary of it, if I may, which I believe will not require more than 5 minutes for me to present.

Senator DODD. Fine. Please proceed.

Mr. PENDERGRASS. Mr. Chairman, Senator Weicker, I am here at your invitation this afternoon to testify concerning the accident that occurred a year ago at the L'Ambiance Plaza construction site in Bridgeport, CT.

That disaster serves as a stark reminder that we must do a better job in assisting employers and employees to reduce worksite hazards.

There are three characteristics of construction work which make it particularly hazardous—first, the constantly changing nature of the physical work environment; second, the diffusion of responsibility among the many subcontractors frequently found at a site; and third, the impermanence of the work force.

We recognize the seriousness of the problem in the construction industry. We devote a significant portion of our resources to that sector. Since 1980, OSHA has increased its inspection activity at construction sites by more than 30 percent. About one-third of the agency's inspection hours are now being devoted to construction.

As we explained to your staff, my remarks on the accident at L'Ambiance Plaza must be brief. The citations that we issued as a result of our investigation are under contest. Because of the pending litigation, a full discussion of the incident at this time would be inappropriate.

The structure at the Bridgeport apartment building site failed at 1:30 p.m. on April 23, 1987. OSHA sent an investigative team to the site within 4 hours of the collapse.

The following day, we asked the National Bureau of Standards to assist us in our investigation. Dr. Culver led the NBS investigative team most ably.

OSHA and NBS conducted extensive interviews with witnesses, spoke with employee representatives, and gathered and analyzed design specifications, plans, shop drawings, construction records, testing laboratory reports, and project correspondence. NBS conducted laboratory tests and performed extensive analytical evaluations.

NBS published the results of its technical study in September of 1987. They concluded that the probable cause of the collapse was a loss of support at a lifting jack during placement of an upper-level package of three floor slabs. The investigation also documented a lack of conformance with project plans and specifications. Those deviations were not significant in initiating the collapse, but they did influence its rate, progression, and totality.

In the course of our investigation, we learned there had been two previous instances in which a lifting subcontractor had problems with the lift-slab method that were similar to those that probably caused the L'Ambiance Plaza collapse. In each instance, the company made on-site repairs but did not adequately analyze the cause of

the accidents or verify the load-carrying capability of the lift system.

On October 22, 1987, we issued citations to the primary contractor and several subcontractors for numerous willful and serious violations of the agency's safety standards. We proposed $5.11 million in penalties for these violations.

As I have said, the civil citations and penalties in the case have been contested by the companies involved. It is important to ensure that responsibility for safety and health at construction sites is clearly delineated. It is also important that all construction contractors maintain adequate safety and health programs which include, among other things, the self-inspection of accidents.

We have taken a number of steps specifically relating to lift-slab construction. After the April disaster, we set up a local emphasis program in New England to conduct inspections at all buildings under construction where we were aware that the lift-slab process was being used. When we found hazards similar to those that caused the L'Ambiance Plaza collapse, we issued citations and obtained abatement.

We also conducted inspections in New York and Florida at projects used in the lift-slab process. Following our inspection at Bridgeport, we contacted companies that use the lift-slab method and shared with them the information that came to light during our investigation.

I have recently sent guidelines for compliance officers inspecting lift-slab construction projects. The guidelines summarize the OSHA standards that relate to the lift-slab process and indicate where it would be appropriate to cite the General Duty Clause of the Occupational Safety and Health Act.

It was apparent that the hazards of lift-slab construction needed to be addressed in a separate standard. On March 30, we presented a draft proposal for a separate lift-slab standard to the Advisory Committee on Construction Safety and Health for their comment and recommendations. A proposed rule on the lift-slab process is scheduled for publication in December.

We have taken vigorous corrective action against a number of firms, including some construction firms which have shown willful disregard for worker safety. This aggressive penalty policy should make it clear to all employers that construction work must be made much safer and that close attention to Federal safety and health requirements is essential.

Mr. Chairman, construction work continues to claim the lives of far too many workers in this country each year and needlessly injures many more. A disaster like that in Bridgeport serves to remind us that our goal of protecting America's workers is not an easy one to achieve. We welcome the Committee's interest in this serious problem.

This concludes my prepared remarks, and I will be happy to respond to questions.

[Statement follows:]

[EDITOR'S NOTE: Due to printing limitations and in the interest of economy, the following publications submitted for the record by Mr. Pendergrass were retained in the files of the committee: "Investigation of L'Ambiance Plaza Building Collapse in Bridgeport,

Connecticut," U.S. Department of Commerce, NBSIR 87-3640 (316 pp.); "Safety and Health Program Requirements and Qualifications of Supervisors in the Construction Industry—Selected References," presented to the Advisory Committee on Construction Safety and Health March 29-30, 1988 (141 pp.); "Protection and Production," legislative proposal for construction industry Safety and Health Act by the Building and Construction Trades Department, AFL-CIO (157 pp.); and two small brochures.)

[The prepared statement of Mr Pendergrass, with attachments, follow:]

STATEMENT OF
JOHN A. PENDERGRASS
ASSISTANT SECRETARY FOR OCCUPATIONAL SAFETY AND HEALTH
BEFORE THE
COMMITTEE ON LABOR AND HUMAN RESOURCES
UNITED STATES SENATE

April 26, 1988

Mr. Chairman and Members of the Committee:

I am here at your invitation this morning to testify concerning the accident which occurred a year ago at the L'Ambiance Plaza construction site in Bridgeport, Connecticut. I will also discuss the implications which the collapse of that building -- and the lives that were lost there -- have for the work of the Occupational Safety and Health Administration (OSHA).

The collapse of the L'Ambiance Plaza apartment complex serves as a stark reminder -- if any is needed -- that we must better assist employers and employees in the construction sector to reduce worksite hazards. This hearing affords an opportunity to focus on the particular problems the agency faces in assuring, so far as possible, that construction workers in this country are provided safe and healthful places of employment as the Occupational Safety and Health Act of 1970 (the OSH Act) requires.

Hazards on construction sites are persistent and significant. This is due largely to three characteristics of construction work: first, the constantly changing nature of the physical work environment, which makes it difficult to identify and correct hazards; second, the diffusion of responsibility among

the many subcontractors often found at a construction project; and third, the impermanence and transitory character of much of the workforce.

Because we recognize the urgency of the problem in the construction industry, we are devoting a significant portion of OSHA's resources to that industry. Since FY 1980, OSHA has increased its inspection activity at construction sites by more than 30 percent. About one-third of the agency's inspection hours are now being devoted to construction. What is more important is that we are identifying more significant hazards at the worksites we visit, as the accompanying charts indicate.

* * * *

My remarks on the accident at L'Ambiance Plaza will necessarily be brief. The citations that we issued as a result of our investigation are being contested by the employers involved, and a full discussion of the incident at this time would be inappropriate because of the pending litigation.

At 1:30 PM on April 23, 1987, the structure at the Bridgeport apartment building site failed. OSHA responded to the accident promptly. An agency investigative team was on site within four hours of the collapse. The following day, OSHA requested the assistance of the National Bureau of Standards (NBS) in investigating the failure and determining the probable cause of the accident.

Throughout the nine-day rescue operation and the six-month investigation that followed, OSHA and NBS conducted extensive interviews with witnesses, spoke with employee representatives, and gathered and analyzed project documentation including design specifications, plans, shop drawings, construction records, testing laboratory reports, and project correspondence. NBS conducted laboratory tests of samples removed from the collapsed structure and onsite subsurface testing, and performed analytical studies, including computer analyses.

This investigation scrutinized, among other things, the lift-slab construction method used in the project. In this process, the concrete floors are poured at ground level, then lifted by hydraulic jacks into their final positions on steel support columns. The NBS technical study, the results of which were published in September 1987, concluded that the probable cause of the collapse was a loss of support at a lifting jack during placement of an upper level package of three floor slabs. NBS concluded further that this loss of support occurred most probably because of excessive deformation of the lifting angle of the shearhead. (The lifting angle is the component of the lifting system that engages the lifting nut which is attached to the lifting rod and thus allows the jack, through its connection to the lifting rod, to support the floor slab. The deformation of the lifting angle can cause the lifting rod and nut to disengage from the floor slab, thereby dropping the slab.) The investigation also

documented nonconformance with project plans and specifications in a number of areas. Although these deviations did not play a significant role in initiating the collapse, they influenced its rate, progression and totality.

In the course of its investigation, OSHA learned that Texstar Construction Corporation of San Antonio, the lifting subcontractor at L'Ambiance Plaza, had encountered at least two earlier problems with the lift-slab method -- problems that were similar to the probable cause of the L'Ambiance Plaza collapse. The first occurred in March 1986 at the Metro Center building site in Stamford, Connecticut, where a shearhead failure caused a floor slab to fall about 15 inches; the structure did not collapse, but a worker was injured. The second incident occurred at the L'Ambiance Plaza site itself, two months before the April accident. In each of the earlier instances, the company made onsite repairs but did not analyze the cause of the accidents or verify the load-carrying capability of the lift system.

On October 22, 1987, OSHA cited the primary contractor and several sub-contractors on the project for numerous willful and serious violations of the agency's safety standards. We proposed a record $5.11 million in penalties against the primary contractor and several subcontractors, among other things, for:

-- alleged willful violations of OSHA standard 29 CFR 1926.700(a), which requires that jacking equipment (which is used in lift-slab concrete construction),

and members that transmit loads to the jacks, must be strong enough to carry 2.5 times the anticipated load; and

-- alleged willful violations of the general duty clause of the OSH Act, for failure to install adequate external lateral bracing and shear walls in order to assure that the building had adequate lateral support during the construction process.

The largest portion of the penalties, $2.524 million, was proposed against Texstar, the subcontractor responsible for the system for lifting concrete floor slabs.

A penalty of $2.475 million was proposed against TPMI/Macomber, the joint venture company, which as primary contractor and project manager, was contractually responsible for overall safety and health at the project. As the primary contractor, we held TPMI/Macomber responsible for all violations of the safety and health requirements which it could have prevented in its role of supervisor of the entire project, whether or not any part of the work was subcontracted.

As noted, the civil citations and penalties in the case have been contested by the companies involved.

On March 4, 1988, the Department of Labor referred the case against Texstar to the Department of Justice (DOJ) for review, to determine whether criminal prosecution under the OSH Act would be appropriate. DOJ is reviewing the case at this time.

Our experience in this investigation has strengthened our resolve to address the lack of clear delegation of authority for health and safety at many construction projects. Among the factors that make it difficult to safeguard workers in the construction sector are the overlapping schedules and responsibilities among the various subcontractors who may be operating at a single site. Sharing the same work area in a multi-employer establishment tends to obscure accountability for control of hazards and prevention of accidents. It is important to assure that responsibility for safety and health at construction sites is clearly delineated. It is also important to assure that all construction contractors maintain adequate safety and health programs, which include, among other things, the self-inspection of incidents like that which occurred at the Stamford Metro construction project in March 1986.

In part, as a result of our experience with the L'Ambiance Plaza investigation, we issued guidelines in June 1987 to our field staff concerning the requirement in the construction standards that employers maintain effective safety and health programs. Under the new guidelines, compliance officers are directed to look, among other things, for the presence of internal safety and health rules, the assignment of responsibility for safety and health, the existence of procedures to identify and control hazards, and the degree of employee participation in the program. At the same time we issued instructions to our field offices emphasizing the training

requirements in OSHA's construction standards to ensure that employers do a better job in training their employees.

Further, because of our concern that accidents like that at L'Ambiance Plaza do not occur, we have taken a number of actions specifically relating to lift slab construction:

- o After the April 23rd accident, we established a local emphasis program in New England and conducted inspections at all buildings under construction where the lift-slab process was being used. Where we found hazards similar to those that had caused the L'Ambiance Plaza collapse, we issued citations and obtained abatement. We also conducted inspections in New York and Florida at projects using the lift-slab method of construction.
- o Following our investigation of the L'Ambiance Plaza collapse, we contacted companies that use the lift-slab construction process and shared with them the information that came to light during our investigation.
- o I also established a Department of Labor task force to review the issues raised in the investigation and to make policy recommendations. The task force has prepared an instruction to OSHA field staff, to be issued shortly, which is undergoing internal agency review. The instruction will provide guidelines for conducting inspections of worksites where

the lift-slab process is used, summarizes the relevant OSHA standards that relate to the process, and indicates where it is appropriate to cite the general duty clause of the OSH Act.

- And, we removed the section relating to the lift-slab process from our revised concrete and masonry construction standard, which is in the final stages of review and is expected to be published shortly. Since it was apparent that the hazards of lift-slab construction needed to be addressed in greater detail in a separate standard, we will re-open the record for the lift-slab portion only. On March 30, we presented a draft, proposed lift-slab standard to the Advisory Committee on Construction Safety and Health for their comment and recommendations. A proposed rule on the lift-slab process is scheduled for publication in December, and a public hearing will be held if requested.

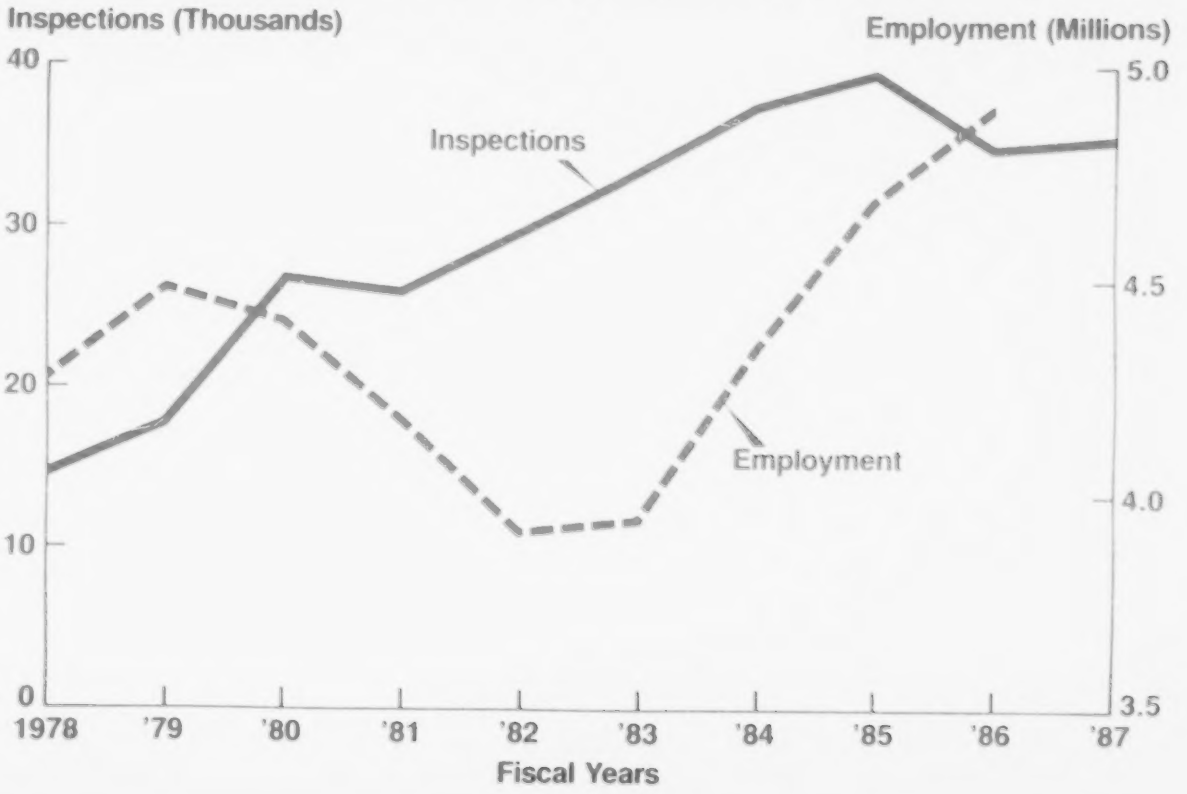
Along more general lines, we have been using the penalty process to emphasize the seriousness of standards violations and to multiply the deterrent effect of a single inspection. As I told this Committee last week at our general oversight hearing, in the past two years, we have been proposing penalties

higher than any in the agency's history. We have taken vigorous corrective action against a number of firms, including some construction firms, which have shown willful disregard for worker safety. This new, aggressive penalty policy, which was initiated in March 1986, should make it clear to all employers that construction work must be made much safer and that close attention to Federal safety and health requirements is essential.

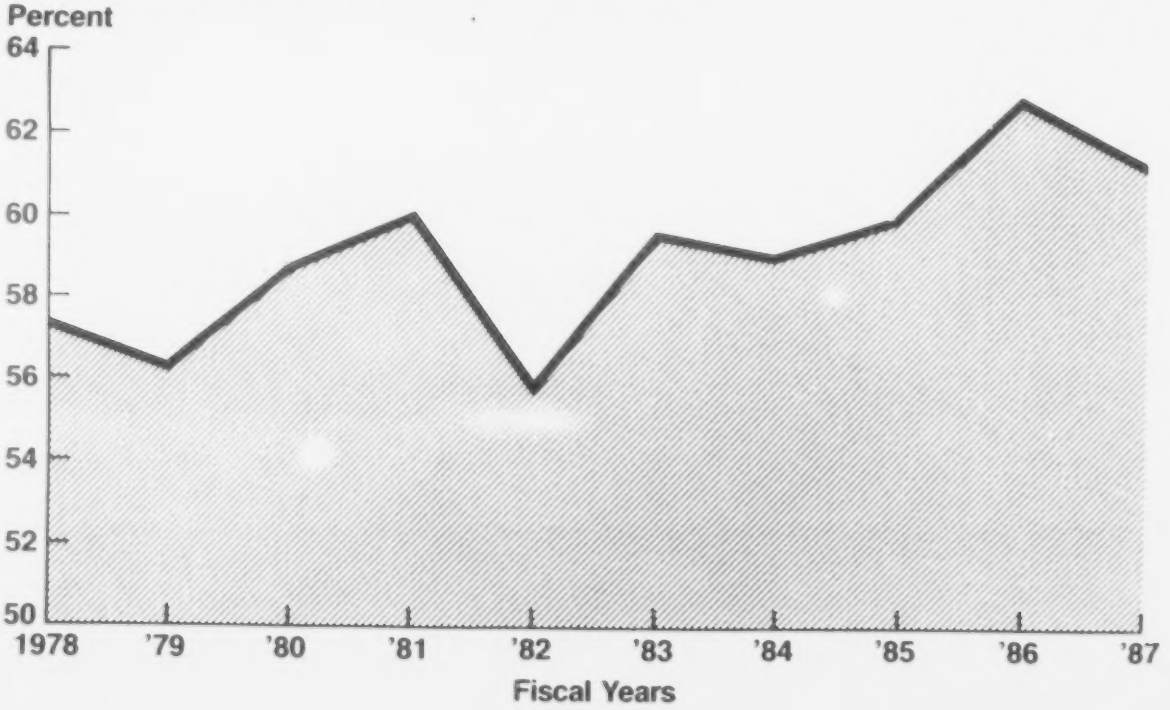
Mr. Chairman, construction work continues to claim the lives of far too many workers in this country each year and needlessly injures many more. A disaster like that in Bridgeport serves to remind us that our goal of protecting America's workers is not an easy one to achieve. We welcome the Committee's interest in this serious problem.

That concludes my prepared remarks. I will be happy to respond to questions.

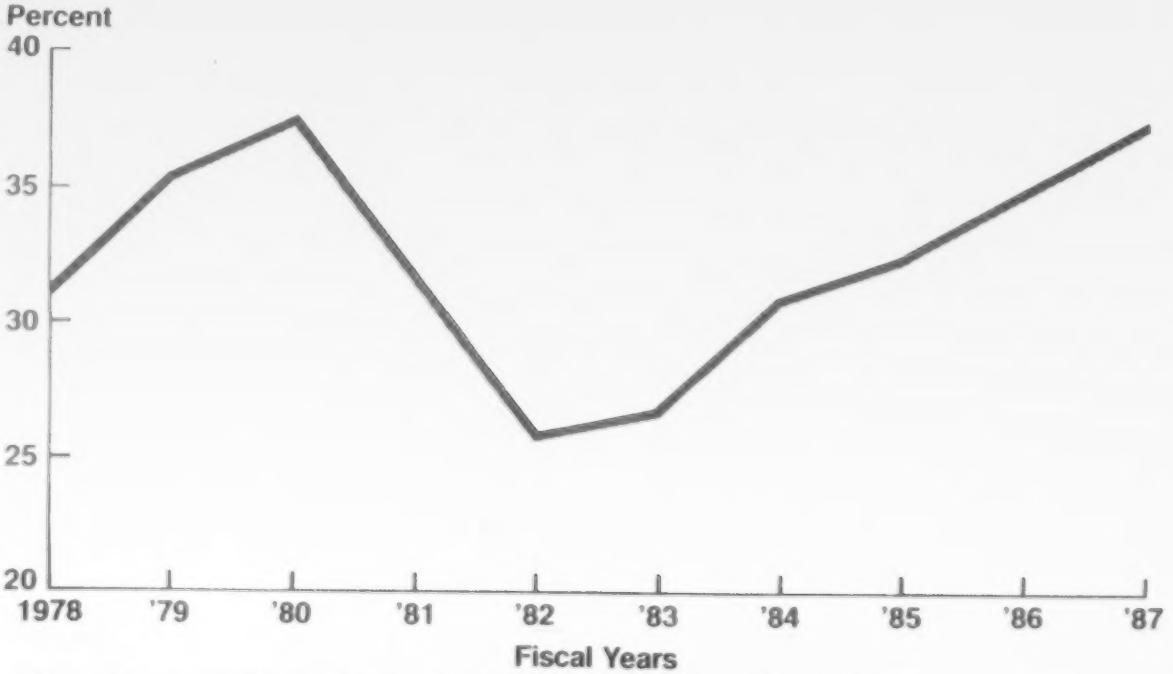
Federal Construction Inspections FY 1978–87



Percent of Construction Inspections with Cited Violations FY 1978–87



PERCENT OF VIOLATIONS CITED ON CONSTRUCTION INSPECTIONS SHOWING SIGNIFICANT PROBLEMS* FY 1978-87



*Willful, Serious, or Repeat Citations, or Failure to Abate Notices were issued.

U.S. DEPARTMENT OF LABOR

Advisory Committee
on
Construction Safety and Health

Report of the
LEGISLATIVE WORK GROUP
John A. Ward, Jr., Chairman

March 29, 1988

U.S. Department of Labor

Advisory Committee on
Construction Safety and Health
Washington, D.C. 20210

M E M O R A N D U M

TO: ACCSH Members

FROM: Jim E. Lapping

DATE: March 1, 1988

SUBJECT: Legislative
Work Group Report

At the direction of Legislative Work Group Chairman Ward, the Work Group report is being sent to the ACCSH members for review and comment.

Chairman Ward requests that any changes or alterations be sent to the Work Group Secretary prior to the March 18, 1988 meeting of the Work Group.

Changes requested by Mr. Ward and General Peel have been incorporated into the attached draft legislation.

For your convenience the Work Group's meeting notes, with paragraph references indicating where the recommended items are located is also enclosed.

Please send your comments to:

Jim E. Lapping
AFL-CIO, Room 603
815 16th Street, NW
Washington, DC 20006
(202) 347-1461

Enclsures
JL/md
A9

U.S. Department of Labor

Advisory Committee on
Construction Safety and Health
Washington, D.C. 20210

Legislative Work Group
San Diego, California
November 4, 1987

Meeting Notes

The work group met at 9:00 a.m. in the Grant Hotel. Attending the meeting were John Ward Chairman, Tom Reynolds, Jim Lapping Secretary, Leonard Dotson, Bill Corrigan and George Henschel.

Chairman Ward stated the work group's assignment: "Draft proposed legislation to be submitted to the Assistant Secretary with recommendations that the proposed legislation be passed to the appropriate legislators for sponsorship, which would provide OSHA greater authority regarding entering the site of accidents, performing timely investigations and overseeing clean-up and recovering operations." Also to be included in the proposed legislation are "record keeping" provisions and "non-preemption of criminal" prosecution at the state level (pages 182-183 transcript 11-3-87 ACCSH). Also to be included in the proposal: "OSHA's standards should include authority to close down jobs found to be clearly unsafe" (page 188). Note: See pages 54-72 for additional discussion of work group assignments.

Chairman Ward established the following objectives for the work group.

Draft proposed legislation that would correct existing deficiencies and improve efficiency of OSHA. The proposal should address the specific issues of:

V 1. Criminal penalties for destruction of evidence or coverup of accidents.

IV (j) 2. Recordkeeping requirements that include registering the location of a project with OSHA and reporting injury and illness records on a project basis, in addition to the current requirement for individual employers to report.

VI 3. Allow criminal prosecution by state and local governments.

VII 4. Require OSHA and employers to remove employees from imminent danger situations and yellow or red tag equipment.

IV (h)	5.	Provide OSHA Compliance Officers access to construction projects without warrants and provide arrest authority for interference with inspection process or investigation.
VIII	6.	Establish minimum qualifications for OSHA construction inspectors to be approved by ACCSH.
IX	7.	Require that a professional engineer or architect design and supervise critical construction projects.
IV (i)(8)	8.	Provide protection from liability for contractors engaged in voluntary emergency rescue operations.
IV (i)(8)	9.	Authorize OSHA to provide employment by the federal government to employees engaged in voluntary emergency rescue operations.
III	10.	Require OSHA to respond to recommendations by ACCSH on all issues pertaining to construction, including but not limited to enforcement, administration and standards.
X	11.	Require contractors to establish a project-specific safety and health program based on criteria approved by ACCSH.
I	12.	Exempt OSHA from the Paperwork Reduction Act.
II	13.	Include independent (self-employed) contractors under OSHA coverage.
IX	14.	Requires contractors to establish Emergency Response Plans.

Chairman Ward adjourned the meeting at 10:30 a.m. by summarizing the importance of changing OSHA to improve job site safety and health, the agencies' credibility and to gain support for OSHA programs from the entire construction industry.

Additional work group communications will be conducted by telephone and letter with a meeting scheduled prior to the next ACCSH meeting.

Submitted by John A. Ward Jr.
Chairman Ad Hoc Work Group

Jim E. Lapping
Secretary

ACCSH-04

The Advisory Committee on Construction Safety and Health recommends that the following proposed legislation be passed to the appropriate legislators for sponsorship.

I. Enact a provision providing: "The Paperwork Reduction Act of 1980 shall not apply to this Act or to any regulations issued pursuant to this Act."

II. Amend Section 3(5) of the Occupational Safety and Health Act to provide: "The term 'employer' means a person engaged in a business affecting commerce, including an independent, self-employed person, but does not include the United States or any State or political subdivision of a State."

III. Amend Section 7(b) of the Occupational Safety and Health Act to provide that the present Section 7(b) shall be designated Section 7(b)(1) and that a new Section 7(b)(2) shall provide:

(A) The Secretary shall utilize the services of the Advisory Committee on Construction Safety and Health (hereinafter referred to as the "Construction Advisory Committee") established pursuant to section 333(e) of Title 40. The Construction Advisory Committee shall advise, consult with, and make recommendations to the Secretary in the formulation of construction safety and health standards and other regulations, and with respect to policy matters concerning the construction industry arising in the administration of this Act. The

Secretary and the Construction Advisory Committee may appoint such special advisory and technical experts or consultants as may be necessary to carry out the functions of the Construction Advisory Committee. Prior to implementation by the Secretary or the Occupational Safety and Health Administration of any standards, policies, directives or instructions concerning construction safety and health, such standards, policies, directives or instructions shall be submitted to the Construction Advisory Committee for its prior review and approval.

(B) The Construction Advisory Committee shall be responsible for designating an organization or organizations to certify employer safety and health programs.

(C) The Construction Advisory Committee shall engage in research directed at determining the causes of jobsite accidents in the construction industry. In furtherance of that responsibility, the Construction Advisory Committee shall have the authority to conduct investigations of construction jobsite accidents, including the investigation of construction worksites, and in that connection shall be vested with the same investigatory powers as are vested in the Occupational Safety and Health Administration under this Act.

(D) The Construction Advisory Committee shall have the authority to call its own meetings and set its own agendas. The Construction Advisory Committee shall have the authority to designate standing committees and to appoint members to those committees.

(E) In connection with the powers designated above, the Construction Advisory Committee shall have the authority to subpoena witnesses to appear before it and to place those witnesses under oath.

(F) The Secretary shall set aside a budget, taking into consideration the budgetary request of the Construction Advisory Committee, for the Construction Advisory Committee from the appropriations under Section 33 of this Act. The Construction Advisory Committee shall have sole authority to expend the monies in its budget for whatever purpose it chooses, so long as the purpose falls within the general scope of authority granted to the Construction Advisory Committee in this subsection.

IV. Amend Section 8 of the Occupational Safety and Health Act by addition the following subsections, which shall provide:

(h) **Authority of Secretary to enter, inspect, and investigate places of construction employment; time and manner**

In order to carry out the purposes of this Act, the Secretary or his authorized representative, upon presenting appropriate credentials to the employer, owner, contractor or agent in charge, is authorized -

(1) to enter without delay and at reasonable times any construction site or other area where work is performed by an employee of an employer; and

(2) to inspect and investigate during regular working hours and at other reasonable times any such place of employment and all pertinent conditions, structures, machines, apparatus, devices, equipment, and materials therein, and to question privately any such employer, owner, contractor, agent, or employee.

(3) to arrest individuals who refuse to allow the Secretary or his authorized representative access to any area of the construction site or who interfere in any manner with the inspection or investigation.

(i) Fatality and catastrophe reporting, investigations and procedure

(1) Every employer shall report to the Occupational Safety and Health Administration by electronic means (telephone or telegraph), immediately after their occurrence, all accidents on a construction worksite which result in the death or hospitalization of any employee.

(2) The reports required by subsection (1) shall specify a) the owner and location of the worksite, b) the name and business address and telephone number of the employer whose employee or employees were killed or injured, c) the name and business address of the project contractor or general contractor at that worksite, d) the date and time of the accident, e) the type of accident (e.g. fire, explosion, building collapse, etc.), f) the number of fatalities and/or injuries, and their nature, g) the number of persons hospitalized, h) the number of persons unaccounted for at the time the report is made, i) whether the Occupational Safety and Health Administration has been contacted, and if so, the time when the Occupational Safety and Health Administration is expected to arrive at the worksite, j) the identity of the "competent", "authorized" and "designated" persons having responsibility and/or authority with regard to the operation or operations involved in the accident, to the extent known at the time of the report, k) weather conditions at the

time of the accident, 1) the trades or crafts to which the deceased and/or injured employees belonged, to the extent known at the time of the report.

(3) Upon the occurrence of such an accident, with the exception of provision to the employees affected of medical treatment and medical transportation, the employer, or the appropriate contractor or the owner, shall bar ingress to and egress from the accident site, or other interference with such site, until the Occupational Safety and Health Administration completes its investigation of the site. The employer, or the appropriate contractor or the owner, shall take appropriate measures to prevent the destruction of any evidence which would assist in investigating the cause or causes of the accident.

(4) Upon the occurrence of such an accident, the Occupational Safety and Health Administration shall conduct an investigation of the accident, including an inspection of the accident site, as soon as practicable. The employer, or the appropriate contractor or the owner, shall grant the Occupational Safety and Health Administration immediate access to the accident site. The Occupational Safety and Health Administration shall take whatever action it deems appropriate to ensure that a full investigation is made. Such an investigation shall be initiated within 48 hours following receipt of the employer's

report unless rescue and recovery operations are in progress or unless the Occupational Safety and Health Administration determines that the conditions at the accident site would make an investigation dangerous.

(5) Following its investigation of the accident, the Occupational Safety and Health Administration shall prepare a description in narrative terms of the accident and submit it to the Secretary as soon as practicable, but in no event later than 48 hours following the commencement of the investigation. Such description shall include all of the items listed in subsection (2) as well as the possible causes of the accident.

(6) The Occupational Safety and Health Administration shall submit a follow-up report to the Secretary within two weeks following completion of the investigation of the accident which shall include at a minimum all of the items described in subsection (5), as well as interim recommendations for preventing similar accidents in the future.

(7) Within 30 days after receipt of the follow-up report described in subsection (6), the Occupational Safety and Health Administration shall prepare a report of the accident which shall be available to the public and which shall include a summary of the facts relating to the accident, the causes

thereof, and recommendations for preventing similar accidents in the future; provided that such report shall not contain the names of affected employers or deceased or injured employees.

(8) In the event of any accident occurring at a construction worksite, where rescue and recovery work is necessary, an authorized representative of the Occupational Safety and Health Administration shall take whatever action he deems appropriate to protect the life of any person, and he may, if he deems it appropriate, supervise and direct the rescue and recovery activities at such worksite. Such representative shall have the authority to declare a worksite where rescue and recovery work is necessary a public emergency and to utilize the services, facilities, equipment, or employees of any employer to assist him in carrying out the functions of this subsection. Any employees who work at the direction of such representative shall be treated as temporary employees of the Occupational Safety and Health Administration. The United States shall indemnify an employer for any liability arising out of the utilization of that employer's services, facilities, equipment, or employees at the direction of such representative. The employer, or the appropriate contractor or the owner, shall obtain the approval of such representative, in consultation with appropriate state representatives, when feasible, of any plan to recover any person at such worksite or to return affected areas of such worksite to normal.

(j) Construction Project and employer reports

Each employer engaged in construction work shall, yearly and upon completion of work at a construction project, file a report with the Occupational Safety and Health Administration. Such report shall identify the project and for each employer, the duration of work, the number of employees, the number of man hours, the nature of the work, the number of work accidents, the nature of any work accidents, the cause of any work accidents, any injuries, any deaths, and any other information that the Occupational Safety and Health Administration determines to be relevant. Such information shall be used to determine the national incident rate average for each type of construction work. Such information shall also be used to target for inspections employers that have a higher than average incident rate.

V. Amend Section 17 of the Occupational Safety and Health Act to add the following subsection:

(m) an employer who denies the Secretary access to a construction site in order to inspect or investigate, who interferes in any manner with such inspection or investigation, or who destroys or permits the destruction of evidence which

89-240 - 88 - 5

would assist in the investigation of the cause or causes of an accident, shall be punished by a fine of not more than $100,000 or by imprisonment for not more than one year, or by both.

VI. Amend Section 18(a) of the Occupational Safety and Health Act to provide:

(a) State and Local Laws

(1) No State or local law shall be superseded by any provision of this Act or order issued or any health or safety standard, except insofar as such law is in conflict with this Act or with any order issued or any health or safety standard.

(2) The provisions of any State or local law or regulation which provide for more stringent health and safety standards than do the provisions of this Act or any order issued or any health or safety standard, shall not thereby be construed or held to be in conflict with this Act. The provisions of any State or local law or regulation which provide for health and safety standards for which no provision is contained in this Act or in any order issued or any health or safety standard, shall not be held to be in conflict with this Act.

(3) State and local law enforcement agencies shall be permitted to seek criminal prosecutions in accordance with their

laws. Such prosecutions shall not be preempted by this Act. Such prosecutions shall not, however, prohibit the Secretary from seeking criminal penalties under this Act.

VII. Amend Section 13 of the Occupational Safety and Health Act to add the following subsections:

(e) In addition to the injunctive relief authorized in this section, if, upon any inspection or investigation of a construction site which is subject to this Act, an authorized representative of the Secretary finds that an imminent danger exists, such representative shall determine the extent of the area of such site throughout which the danger exists, and issue an order requiring the employer to cause all persons, except those referred to in subsection (f) of this Section, to be withdrawn from, and to be prohibited from entering, such area until an authorized representative of the Secretary determines that such imminent danger and the conditions or practices which caused such imminent danger no longer exist. The issuance of an order under this subsection shall not preclude the issuance of a citation under section 9 of this Act or the proposing of a penalty under section 17 of this Act. The authorized representative shall also clearly mark, i.e., with a yellow or red tag, or tape off the equipment or site that is an imminent danger.

(f) The following persons shall not be required to be withdrawn from, or prohibited from entering, any area of the construction site subject to an order issued under this section:

(1) any person whose presence in such area is necessary, in the judgment of the employer or an authorized representative of the Secretary, to eliminate the condition described in the order;

(2) any public official whose official duties require him to enter such area;

(3) any representative of the employees who is, in the judgment of the employer or an authorized representative of the Secretary, qualified to make such construction site examinations or who is accompanied by such a person and whose presence in such area is necessary for the investigation of the conditions described in the order; and

(4) any consultant to any of the foregoing.

VIII. Amend Section 21 of the Occupational Safety and Health Act to add the following subsection:

(d) Qualifications and Training Personnel in the Construction Industry.

The Secretary shall establish minimum qualifications for personnel engaged in work related to the construction industry. The Secretary is authorized to conduct training of such personnel. Such training and qualification requirements must be submitted to the Construction Advisory Committee for its approval prior to implementation.

IX. Enact a provision providing:

Construction Process Plan and Hazard Analysis for Certain Construction Operations

(a) Every prime contractor shall have prepared a construction process plan and hazard analysis for every construction project prior to the commencement of work. The construction process plan and hazard analysis shall be prepared by:

(1) a licensed professional engineer for the following operations:

(A) The construction of trenches and excavations which are five feet or deeper and into which a person is required to descend.

(B) The construction of any building, structure, or scaffolding more than three stories high or the equivalent height.

(C) The demolition of any building, structure, or the dismantling of scaffolding, more than three stories high or the equivalent height.

(2) a "competent" person for all other operations.

(b) Such construction process plan and hazard analysis shall contain at least the following components:

(1) The plan shall describe the step-by-step process for construction of the project, and shall contain specific reference to critical points and conditions requiring special attention. Critical points and conditions include but are not limited to:

(A) Maintaining structural stability;

(B) Preventing cave-ins;

(C) Placement and stripping of concrete forms and shoring;

(D) Foundation conditions and placement.

(2) The plan shall identify the means to be used to ensure stability of the project during the construction process, including:

(A) Bracing,

(B) Guying,

(C) Shearwall connections,

(D) Shoring.

(3) The plan shall contain a list of all inspections and tests required, including a schedule for such inspections and tests, as well as criteria established for continuation of construction based on inspection and test results. Inspections and tests for soil compaction, concrete strength, bracing placement, fire supression and alarm systems and all other inspections and tests necessary for the safe construction of the project shall be included.

(4) The plan shall identify specifically the processes and activities requiring supervision by a "competent" person on behalf of the project contractor and/or any other contractor or subcontractor on the project.

(5) The construction process plan shall be based on, and make appropriate references to, a hazard analysis to be prepared by the licensed professional engineer or the "competent" person, as set forth in subsection (a), on behalf of the project contractor. Such hazard analysis shall identify the possibilities for major safety failure of the project that could

occur throughout the construction process, and shall include but not be limited to the potential for:

(A) Structural collapse;

(B) Cave-ins;

(C) Fire;

(D) Flooding or other water hazards;

(E) Explosions;

(F) Lightning.

(6) The hazard analysis shall contain instructions and provisions for the prevention of hazards throughout the construction process, including the hazards listed in paragraph (5).

(7) The hazard analysis shall include a listing of all standards promulgated by the Occupational Safety and Health Administration which are applicable to any part of the project or which, in the opinion of the licensed professional engineer or the "competent" person, as set forth in subsection (a), would, if followed, reduce the risk of accident or injury.

(c) The prime contractor shall provide to every other contractor and subcontractor on the project, prior to commencement of work

by that contractor or subcontractor, a copy of the construction process plan and hazard analysis. The prime contractor and every contractor and subcontractor on the project shall maintain the plan and analysis throughout its presence on the project and make them available for review by its employees and their representatives.

(d) Every aspect of the construction process plan shall be observed by the prime contractor and all other contractors and subcontractors on the project unless a licensed professional engineer or "competent" person, as set forth in subsection (a), certifies, in writing, an exception from one or more aspects of the plan. Such certification shall make specific reference to the contractor involved, and the time, place and operation affected, shall provide reasons why the exception has been approved, and shall specify any substitute or alternative process or processes which must be used by such contractor.

X. Enact a provision providing:

Every employer in the construction industry, including employers acting as project contractors, general contractors, and sub-contractors, shall establish and implement, on every one of its jobsites, for the benefit of the employees for whom the

employer is responsible, a safety and health program which meets the criteria set by the Construction Advisory Committee. The Construction Advisory Committee shall designate the criteria for such safety and health programs.

U.S. Department of Labor

Advisory Committee on
Construction Safety and Health
Washington, D.C. 20210

MEMORANDUM

TO: ACCSH Members

FROM: Jim E. Lapping

DATE: February 23, 1988

SUBJECT: Role of Engineer/Architect

Chairman Peel has requested that discussion materials be prepared to guide the ACCSH member's consideration of the qualifications and role of Project Supervision.

The ACCSH has recommended:

"THE GENERAL PROVISIONS FOR CONCRETE CONSTRUCTION SHOULD REQUIRE A REGISTERED ENGINEER/ARCHITECT TO DESIGN AND OVERSEE THE CONSTRUCTION, TO ENSURE THAT THE ENGINEERING DESIGN PLANS ARE COMPLIED WITH, DURING ALL CONCRETE CONSTRUCTION, AND THAT THE ENGINEER HAVE THE AUTHORITY TO SHUT DOWN THE JOB IN THE EVENT THE PLANS AND SPECIFICATIONS ARE NOT BEING COMPLIED WITH."

November 4, 1987, pp. 125-128.

DEFINITION OF "REGISTERED PROFESSIONAL ENGINEER." A PERSON WHO HAS ATTAINED THROUGH ENGINEERING EDUCATION, AND EXPERIENCE A SPECIAL KNOWLEDGE OF MATHEMATICAL, PHYSICAL, AND ENGINEERING SCIENCES AND PRINCIPALS AND METHODS OF ENGINEERING ANALYSIS AND DESIGN, AND IS REGISTERED AS A PROFESSIONAL ENGINEER IN THE STATE WHERE WORK IS TO BE PERFORMED.

August 5, 1987, transcript p. 466.

SUBPART C: General Safety And Health Provisions

1926.20 GENERAL SAFETY AND HEALTH PROVISIONS

(c) *Supervision by Engineer - Architect.* (1) All construction projects shall be under the supervision of a Professional Engineer-Architect (E-A) who is registered in the state where the project is located. The owner of the project is responsible for designating E-A, unless the project contract specifically assigns this responsibility to a Construction Manager or General Contractor.

(2) At each construction project, the name and registration number of the E-A and all designated representatives shall be posted near the OSHA poster. Work on the project shall be performed only under the supervision of the E-A, or designated representatives. The E-A shall be responsible for determining the experience and qualifications of all designated representatives. Designated representatives shall also meet the requirements of Competent Persons.

(3) Where projects, because of their size or complexity, require the E-A to designate additional representatives; it shall be the E-A's responsibility to make such determination and to assure that adequate designated representatives are assigned to supervise the work being performed.

(d) *Project Safety and Health Program and Procedures.* (1) The E-A shall approve the Project Safety and Health Program and Procedures (PSHPP). The PSHPP shall be job-site specific, with bench marks established for monitoring compliance with the

program. Specific duties and responsibilities for monitoring the PSHPP shall be assigned to designated representatives.

(2) The Project Safety and Health Program and Procedures developed for a specific project, shall be reviewed by an independent Engineer or Architect who upon determining that the PSHPP adequately addresses the general conditions anticipated on the project, and contains appropriate organizational structure, and qualified supervision with necessary authority to implement the PSHPP; shall certify approval of the PSHPP by imprinting their professional seal on a copy of the PSHHP.

(e) *Design Requirements.* Whenever the requirement is made for the "Design" of; equipment, structures, temporary structures, drawings, processes or others; such design shall be performed by or under the responsibility of a Professional Engineer or Architect licensed in the state where the work is being performed.

(f) *Notification of Hazards and Violations.* (1) The E-A shall notify, in writing, any contractor or subcontractor performing work on the project of the existence of hazardous conditions or work practices, serious violations of any federal state or local safety and health laws or regulations, and non-compliance with PSHPP.

(2) The E-A shall notify the owner and recommend that work be stopped or affected employees be removed from areas where an imminent danger exists.

(g) *Certification of Competent Persons and Designated Representatives.*

(1) All persons assigned duties of a competent Person or Designated Representative shall be certified in the state where the work is being performed. State programs shall be authorized to certify Competent Persons and Designated Representatives upon approval by the Secretary of the state's certification program and procedures. Where state programs for certification are not provided, such certification shall be by the Secretary.

SUBPART C: General Safety and Health Provisions

1926.32 DEFINITIONS

(s) "Engineer-Architect" means a Professional Engineer or Architect lawfully licensed in the state where the construction work is being performed. The term Engineer-Architect means an Engineer or Architect or designated representative.

(t) The "Work" comprises the completed construction required of the Contractor by the Contract Documents, and includes all labor necessary to produce such construction, and all materials and equipment incorporated or to be incorporated in such construction. [AIA--1.1.3]

(u) The "Project," as defined in the Owner-Contractor Agreement, is the total construction of which the Work performed under the Contract Documents is a part. [AIA--1.1.4]

(v) "Designated Representative" means individual(s) designated by the E-A to carry out the responsibilities of the E-A under the supervision of the E-A.

(w) "Under the Supervision" means personal observation and approval by the E-A or a designated representative, of all construction work and activities.

(x) "Bench Marks" means a specific measurement or check which may be used to affirm whether critical safety procedures are being adhered to during the construction process. Bench Marks are predetermined norms against which job records and other supplementary information acquired from independent observations in the field can be compared to ensure that safe construction practices are being followed. [NBS Cooling Tower Gd]

Senator DODD. Thank you very much, Mr. Pendergrass.

I have a number of questions as I know my colleague does. I will put myself on a 5-minute timer here, so we can go back and forth and maybe cover a lot of ground for each other as well.

First, I want to get into the number of inspectors we are dealing with, or the lack of inspectors. In the State of Connecticut, just to give you some background information, there were 16 health and safety inspectors and 3 supervisors to monitor the State's 70,000 workplaces and the 1.5 million workers. Only 3—and you correct me if I am wrong on this—only 3 of OSHA's 19 Connecticut-based inspectors and supervisors had experience, or the kind of experience you would expect, in the construction industry. Is that your assessment as well?

Mr. PENDERGRASS. Well, I think there is some discrepancy here, Mr. Chairman. On April 25, 1987, there were a total of 28 employees in the Hartford City Area Office. There were 22 compliance officers [CSHOs] onboard; 15 of these were in safety, and 8 were health inspectors.

Senator DODD. And of the 15, how many had background in——

Mr. PENDERGRASS. We have three of our CSHOs who came from the building trades, plus a CSHO engineer. In addition to that, all of our inspectors have some experience in safety—some more than others, depending on their locations.

But we do try to have our compliance officers broadly trained so that they can look at the multitude of worksites that we are called on to investigate.

Senator DODD. In 1984 and 1986, statistics from OSHA indicated a 45 percent increase in inspector activity in the State, and yet there was no increase at all in the number of personnel to handle that increased activity. Why not?

Mr. PENDERGRASS. I don't know what the figures are that you are referring to.

Senator DODD. Well, OSHA reports a 45-percent increase in construction activity in the State in the 1984 to 1986 period. We had a building boom in the State.

Mr. PENDERGRASS. Yes, sir.

Senator DODD. And yet, here we have a building boom, an increase of 45 percent, and yet you still have the same number of inspectors.

Mr. PENDERGRASS. It is obvious that we are trying to send our inspectors to the places where they can do the most good. Overall, across the country, about 58 percent of our resources go into construction. Now, this will vary from one location to another, depending on the amount of construction that is going on. In some places, there may not be much; in Connecticut, obviously, there has been a great increase.

Senator DODD. But isn't it true that you have fewer OSHA inspectors in 1988 than you had in 1980?

Mr. PENDERGRASS. I don't think I have the figures all the way back, Senator.

Senator DODD. Well, let me help you. In 1980, the high point in OSHA inspection, staffing was 1,328 inspectors. That was testimony that you gave on February 2, 1988 to the House Subcommittee on Health and Safety.

Mr. PENDERGRASS. Right.

Senator DODD. In 1987, 1,125; in 1988, 1,245. How do you explain in an 8-year period, with the kind of increase in activity, that drop in the number of inspectors?

Mr. PENDERGRASS. Well, the number of staff for OSHA decreased significantly in 1981–82—so I have been advised.

Senator DODD. Well, the Congress made recommendations in 1982 that OSHA hire up to 1,800 people. At the administration request, the number was dropped to 1,200.

What were your recommendations to the administration?

Mr. PENDERGRASS. Sir, I was not a part of the agency in 1982.

Senator DODD. Well, how do you justify that kind of a drop, then?

Mr. PENDERGRASS. Senator, I cannot justify it, because I wasn't a part of the agency at that time.

Senator WEICKER. Will you yield?

Senator DODD. Sure.

Senator WEICKER. Let me bring it right up-to-date. On March 23, you testified before the House Appropriations Subcommittee on Labor/HHS that you have 1,153 compliance officers or inspectors to monitor approximately 6 million worksites. Last week, you testified before this committee that you have 1,038 compliance officers.

So somehow between March and April, you lost 100 compliance officers. Now, how many inspectors do you have onboard? Obviously, you weren't around in 1982, but you are here now—and that is in just 1 month, you have lost 100 inspectors. Where did they go?

Mr. PENDERGRASS. As of March 26, we had a total onboard of 1,164 compliance officers. That includes 53 for the 11(c) or discrimination investigations.

Senator WEICKER. On March 26, you had one thousand one hundred and what——

Mr. PENDERGRASS. And 64, which includes 53 that are 11(c) investigators.

Senator WEICKER. Now, what about your testimony saying you had 1,038?

Mr. PENDERGRASS. The number of CSHOs will vary from one time to another. Unfortunately for us, but fortunately for health and safety in the country—employers find OSHA-trained compliance officers very attractive, and they hire them. So we are continually recruiting people.

Senator WEICKER. So you are down 100 more, right?

Mr. PENDERGRASS. Well, the figures that I have—and I don't have that particular date in front of me, Senator——

Senator WEICKER. Well, it was your own testimony before the committee.

Mr. PENDERGRASS. Last week, at the committee hearing, I testified——

Senator WEICKER. You testified you had 1,038.

Mr. PENDERGRASS. 1,034, I think—all right, 1,038. That was the figure for the end of February.

Senator DODD. That is both for construction and general industry.

Mr. PENDERGRASS. Yes, sir, both health and safety.

Senator WEICKER. I am sorry, Mr. Chairman. I didn't mean to interrupt. It obviously becomes clear that this fluctuates all over the place.

Senator DODD. I have in front of me the job description of an inspector. It is not a complete list, but some of the activities that an inspector is required to perform, part of their activities. I would like to ask you to explain to me why this is the case.

The roughly 1,000 Federal inspectors are to: "(1) hold informal meetings to settle cases; act as consultants to business; serve as public relations agents by giving speeches and arranging seminars, act as information officers to handle public inquiries; oversee data processing operations; monitor State OSHA plans; handle Freedom of Information requests; set up office safety and health programs."

Those are listed as part of the job description of an inspector. Aren't those really administration functions, and not the job of an inspector?

Mr. PENDERGRASS. One of the goals——

Senator DODD. Do you disagree? Are those all activities that you——

Mr. PENDERGRASS. They are all activities that a compliance officer would perform at one time or another.

Senator DODD. Handle Freedom of Information requests?

Mr. PENDERGRASS. Yes, sir. We have a lot of them.

Senator DODD. An inspector?

Mr. PENDERGRASS. We have a lot of requests for information that would require review by a compliance officer to make sure that we are providing the information that is requested, but not providing something that is not permitted to be——

Senator DODD. You don't think that ought to be handled by administrative personnel instead of someone who should be out on the sites, checking places, to see whether or not that construction site is actually safe?

We both agree we have got too few people. But those are administrative functions, it seems to me.

Mr. PENDERGRASS. May I respond to the total list, Mr. Chairman, because while we have a responsibility to inspect, we also have a responsibility to educate and train. And the education and training is for both employees and employers. It is very important that the employer know what it is that is expected of them.

We do have an active outreach program where we expect our professional staff to be available to help educate the public. Those functions that are listed are all a part of the overall responsibility that the agency has for discharging the broad responsibilities that the act gives us. And the amount of time that any one compliance officer will spend on that is small compared to the total amount of time that they spend on inspections and getting abatement as a result of informal conferences.

So many of those things are a part of the overall inspection/enforcement aspect.

Senator DODD. Senator Weicker.

Senator WEICKER. Thank you, Mr. Chairman.

You heard Mr. Egan testify—or maybe you weren't here when he did testify——

Mr. PENDERGRASS. No, sir, I wasn't.

Senator WEICKER. Mr. Egan testified that as far as his observations were concerned, there is nothing in terms of inspections going on in the State of Connecticut right now by OSHA that differs in any way from that which was going on at the time of the L'Ambiance collapse.

Now, what have you specifically done, building upon the lesson of L'Ambiance, to try and have OSHA—that part of it, in other words, which is OSHA's responsibility—changed?

Mr. PENDERGRASS. Well, as I mentioned in the opening statement, we have provided some guidance, special guidance, to the compliance officers to improve their ability to look at this type of construction project.

The amount of activity in construction, as I mentioned earlier, is better than 50 percent of our resources. The compliance officers are targeting the jobs that we, from experience, believe are the most hazardous.

Is this significantly different than before L'Ambiance? Overall, probably not. But the L'Ambiance disaster certainly brought this type of construction to our attention. As I mentioned, we are in the process of developing a standard specifically for lift-slab type of construction.

Senator WEICKER. Well, for all the changes that you are recommending—better safeguards by employers, increased scrutiny by OSHA, et cetera—why don't you ask for more resources in the way of money or inspectors?

Mr. PENDERGRASS. Senator, the resources of OSHA will always be finite. As a public official—I think we all have to be cognizant of the tax burdens on the citizens of this country—and I feel compelled to do the most with what we have.

Nevertheless, it can be pointed out that OSHA's requests in the last two years to the Congress have been for some modest increases. And Congress has granted those increases in part.

I firmly support the provision of the OSH Act that places the responsibility for workplace safety and health on the employer. Our policies are designed to emphasize that responsibility. I believe that we must make certain that the employers understand what it is that we expect of them and what it really means to have a safe and healthful workplace.

They must also understand that we will inspect, and we have the tools that are necessary to provide not only firm, but fair, enforcement. I think we have demonstrated in the last 2 years that we not only have the tools, but we have the will to make that extra effort.

I don't think there is any public official who would say, oh, I could never use anything else. We can use more staff. In fact, last fall, the Senate added 40 safety positions to OSHA. We will hire those, and we will use them. We will use them as carefully, as expeditiously, as fully as we can to further safety and health in this country. And I thank you for that addition that we have received.

Senator WEICKER. What was your budget submission to OMB? What did you ask for in the 1989 request? What was your initial request of OMB?

Mr. PENDERGRASS. I don't know whether I have that figure here. However, my request to the Secretary for 1987 and 1988 have been with slight increases, and we have gotten them.

Senator WEICKER. I can't let your last remarks go without just a brief comment. Were it left up to the employers, we wouldn't have had an OSHA. So I am quite unwilling to place upon them the duty of protecting the lives of these ladies' deceased husbands. For you to say that the primary responsibility is the employer, and that you have got to go ahead and educate them—if that is the case, you are not educating them very well.

Senator Dodd has the Connecticut report, which indicates that the State of Connecticut doesn't believe that you are going ahead and enforcing the law or enforcing the safety in the workplace required of the law.

Mr. Lyons testifies before us that this defect sprang out at him—sprang out. So I ask you: Why didn't it spring out at your inspectors on the site?

Would you like to respond to that?

Mr. PENDERGRASS. Senator Weicker, Dr. Lyons is an expert. We went to NBS to get that type of expert help.

Senator WEICKER. But that's after the collapse. Don't you have that kind of expert help before 28 lives are lost? Or are you telling me that the quality of the inspectors is not what it should be?

Mr. PENDERGRASS. No, I did not intend to imply that, Senator Weicker. With regard to the fault springing out to highly-qualified engineers, I don't think that that would have been evident to the compliance officer. I don't think it would have been evident to most engineers. My understanding of the problem was that it was not designed to carry the load that was placed on it. This was the basis for our citations, that there was not a proper safety factor.

We have learned from this tragedy, and I suspect that the National Bureau of Standards has learned, also, and we will——

Senator WEICKER. How many recommendations have you had before you at OSHA relative to the involvement of a professional engineer onsite? How many persons have made that recommendation? How many situations?

Mr. PENDERGRASS. I am not sure that I understand your question, Senator.

Senator WEICKER. Well, let me tell you. A memorandum from Mr. James Lapping, a member of the OSHA Advisory Committee on Construction Safety and Health, to the other members of the committee, recommending the following: "That general provisions for concrete construction should require a registered engineer architect to design and oversee the construction," et cetera.

I have an OSHA memorandum dated June 1978 from Donald McKenzie, a regional administrator, who set guidelines for OSHA inspectors after the accident at Willow Island. He recommended, "the use of an OSHA specialist engineer consultant where needed to assist the local compliance officers in the assessment of technical operations."

So there apparently is widespread agreement that a standard be required involving a professional engineer. Had such a person been onsite, it probably would have sprung out to them, right?

Mr. PENDERGRASS. I have no idea.

Senator WEICKER. Have you followed any of this advice?

Mr. PENDERGRASS. We do use experts, professional engineers and scientists, to help us in investigations in areas where we feel that our expertise is not great enough.

Senator WEICKER. Well, considering the track record of this particular situation—and this wasn't the first instance—did you feel it was incumbent upon you maybe to conduct such an investigation?

Mr. PENDERGRASS. Senator Weicker, there is certainly nothing about the Bridgeport disaster that any of us can feel good about. Any of us would give anything to have been able to say we prevented it. We didn't prevent it. We have learned from it, and we would like to help stop like things in the future——

Senator DODD. Well, let me just stop you right there if I can, Mr. Pendergrass, for one second. Now, I understand 20/20 hindsight is easy. But let's just go back a little bit.

Within a matter of miles down the road from Bridgeport, a few miles down the road, a similar type of construction, thankfully, not with the same results, an employee had lost a couple of fingers, or severely damaged them, anyway, where this kind of accident occurred. It was not the same kind of situation in the sense you had the same effect.

Looking back, let's just look back. In your view, shouldn't that kind of situation have triggered an inspection of lift-slab construction? You had only one inspection on that site in Bridgeport, and that was only as a result of a written request for someone to come down, and that inspection lasted one hour on that entire site.

Now, in retrospect, looking back, we can't undo Bridgeport, but let's try and move forward. Let's take that tragedy and see if something good cannot come of that.

Now, in your view, shouldn't there be a better standard? Shouldn't there have been a moratorium on that type of lift-slab construction, as Dr. Lyons testified, in light of the problems, nationwide, while you looked at it? Shouldn't those things have been done, in retrospect, now? What do you recommend to us as legislators that we do? What improvements are you going to make in your own regulatory scheme as a result of the worst tragedy in 10 years in the construction industry?

Mr. PENDERGRASS. We did a number of things following the accident and the investigation where we gained the knowledge that we now have. We provided that information to all lift-slab contractors that we knew existed in this country.

Senator DODD. Why not put a hold on them for a few weeks?

Mr. PENDERGRASS. Well, I am not sure that it was necessary.

Senator DODD. Twenty-eight people lost their lives.

Mr. PENDERGRASS. Certainly, 28 people lost their lives on that job. However, in talking with the other contractors who do this type of work—one other, because there are not but three—our concern was that this type of construction be designed with a safety factor built in so that the sort of thing that happened at L'Ambiance could not happen again.

They looked at their design and they assured us that they were in excess of the safety factor that we required. We have suggested to them that they should have a professional engineer sign off.

Senator DODD. So you are telling me that if you had a similar type of accident occur that your recommendation would be basically the same again, that you wouldn't even hold up on this.

Mr. PENDERGRASS. I am sorry?

Senator DODD. If you have a similar type of situation—OSHA now—I mean, you are representing working people out there who are counting on you and your office to see that they are protected. What does it take for you to finally say let's hold up for a few days here to see what is going on with this form of construction so that we can protect people? What does it take for you to make that kind of a recommendation?

Mr. PENDERGRASS. I am repeating myself, but I think it is important that we establish that when we found what caused this accident, which was a failure of having enough of a safety factor, we went to the people doing this type of construction and said, "You must have this kind of a safety factor."

We have gone to the American National Standards Institute for clarification and change in their standard, which is well-known to professional engineers and to architects, and specified what it is that must meet that 2½ safety factor.

We did this before any citations were issued on L'Ambiance, because we felt that it was important that that information get out to protect workers.

We have conducted special emphasis programs on this type of construction. We have inspected as many jobs as we have been able to identify. We have issued citations, in some cases serious ones, in others not so serious. It is not necessarily a more hazardous form of construction than other forms if it is done with properly designed buildings and equipment.

Senator DODD. Well, aren't you sort of in a catch-22 situation? The Connecticut delegation wrote you a letter immediately after the accident, and you wrote back, and in your letter you said, and I quote: "Existing OSHA policies also provide for selective investigation of incidents in which significant hazards involving potential danger to workers existed, even if only a loss of property has occurred." That is a quote from your letter.

Mr. PENDERGRASS. Yes, sir.

Senator DODD. Now, if the only way you can trigger an investigation is if five people are injured or one person loses his life, how do you ever fulfill that statement in your letter?

Mr. PENDERGRASS. Well, we certainly do not wait for any type of accident to conduct investigations. We target investigations every day, not waiting for something to happen, but ahead of time, on a routine basis. We issue citations without there being any injury or property damage.

Senator DODD. Well, had you been aware or known about the Metro Center in Stamford, where you had the same contractor, involved in the same type of construction, where you had a worker lose fingers on his hand as a result of slippage or falling as a result of the same kind of process we saw here, wouldn't that maybe have then triggered an inspection beyond the one that was only requested by a worker down there at the Bridgeport L'Ambiance situation?

Mr. PENDERGRASS. I can say now that, yes, it should have. Again, that's the hindsight that you were talking about——

Senator DODD. But you are not required to.

Mr. PENDERGRASS. Senator, this has raised some questions for us with regard to reporting. This was brought up by the Connecticut delegation. And we are certainly not blind to other methods or increased reporting. However, we are trying to determine at what level this should be; what should we require.

Senator DODD. Well, what do you think you should require?

Mr. PENDERGRASS. I don't have the answer to it yet, Senator; I don't know. To me, the loss of two fingers is serious, no question about it.

Senator DODD. But if you do it on a saw, it is one thing; if you do it as a result of a floor falling——

Mr. PENDERGRASS. That seems to be one difference.

Senator DODD. Shouldn't the cause of the injury maybe be the—you are the expert in this area.

Mr. PENDERGRASS. These are some of the problems that we are wrestling with, Mr. Chairman, because there are not easy answers to it. If there were, they probably would have been instituted long before now.

Senator DODD. Well, it has been a year or so. Does it take a hearing like this to draw it out.

Mr. PENDERGRASS. I don't think it takes a hearing like this. As I said, this is something that we are wrestling with. It is something that—in going back and talking with the staff, I have learned that this is a question that has been raised on several occasions.

Senator DODD. I know over the years it has been the same policy used, but in retrospect, isn't it kind of blowing smoke? I mean, this 35,000 inspections—that is how they are referred to—the fact of the matter is the way you count inspections, if there are six contractors on the site, and you inspect the site, that counts as six rather than one. Isn't that true?

Mr. PENDERGRASS. If there are six contractors whose activities are inspected, yes. Each employer is counted as an inspection, because this—again, I go back to the Act itself, which says the employer is responsible, the employer is the one we would cite for any violation of a standard. So yes——

Senator DODD. Don't you think it might be better to clarify that? I understand what you are saying, but I think there is a misunderstanding. At least the perception is you are talking about the sites rather than the number of employers involved on a site.

Mr. PENDERGRASS. Well, if we can use a hypothetical situation that there are pipefitters and electricians and painters on a site, and we inspect the activities of each one, but the pipefitter is the only one where there is a violation, we would cite the pipefitter, not the other two at all.

Senator DODD. But you would have inspected it.

Mr. PENDERGRASS. We would have inspected the other two.

Senator DODD. So you don't just count inspections where you find problems, I presume.

Mr. PENDERGRASS. Oh, no, no. We try to go to those places where there is most likely to be a problem. But no, we conduct inspections where, thank goodness, there are no problems.

Senator DODD. How about criminal penalties? What do you feel about that? Do you think they are too low right now?

Mr. PENDERGRASS. Oh, I don't think that a lot of employers would feel that the penalties are too low. In 1986, the penalty structure was changed to permit instance-by-instance penalties. We have used those where we thought that the conditions were egregious. And the leveling of a $5.1 million penalty——

Senator DODD. I asked about criminal penalties, not civil penalties.

Mr. PENDERGRASS. Well, criminal penalties, as I am sure you are well aware, is a matter of some discussion. It was a matter of a hearing not too long ago. You are aware, of course, that we have recommended criminal penalties to Justice here. There are questions that have been raised as to whether State law or Federal law preempts, and that is something that will be resolved.

However, it is our policy to work with local authorities in any criminal investigation, and we do that, and we will continue to do that. The question of preemption will be resolved at some point.

Senator DODD. Well, again, we can go on and on. There are only a few months left in this administration. But Mr. Pendergrass, I would certainly not take much heart in the fact, when I see a report done by the State of Connecticut—and this is pretty objective; it is an advisory committee made up of employers, contractors, as well as others involved in the building trades—when they conclude that they can't depend on you and your organization to provide monitoring and enforcement of safety on construction sites. That is a pretty significant indictment of people involved in the building trades to draw that kind of conclusion.

Frankly—and I don't lay this at your doorstep personally, but as the representative of this agency—there are people out there who look to OSHA to protect them. And they are looking for some toughness here, because you are the cops, in a sense, on these jobs, and it doesn't have to be intrusive or onerous, as some have suggested; it can be done fairly and honestly and openly. But when you get the kind of responses we get to some of these questions and concerns, it is certainly not heartening to go back and to say look, these problems happen; we are not going to stop every accident that occurs. There are going to be lives lost in this industry, but we have got an agency of Government that is determined to minimize that at all cost and to fight for it. The sense people get is that you are really not on their side, and that is not healthy in our society when people walk away and say, look, we just can't count on an organization established and set up to protect the safety and health of workers.

When you get an objective governmental panel in a State who reach a conclusion that they just cannot rely on you—that is not some irate worker or some child who lost his father; that is a panel of objective people drawing a conclusion in a State where there is a lot of construction—pretty sophisticated people—saying you are not reliable; we cannot rely on you.

How do you respond to that? Have you responded to this report at all?

Mr. PENDERGRASS. Certainly, no one likes to be told or to be characterized as not being reliable. I can assure you that that criticism

is taken to heart not only by me, but by every member of the OSHA organization.

It was gratifying—occasionally, we do get some indication that we are doing something right—in a very recently-issued report from the Congressional Research Service, they say that we have been effective in the construction industry.

Whether we have been effective or whether we have not does not change the fact that there is more that needs to be done. This agency under my leadership, and I think under the leadership of anyone else who comes in, is going to be dedicated to trying to achieve that.

Senator DODD. Thank you for being here.

Senator Weicker, any further questions?

Senator WEICKER. No. Thank you very much, Mr. Chairman.

[Responses of Mr. Pendergrass to questions submitted by Senator Weicker follow:]

Responses to Questions from Senator Weicker, Following the Hearing of April 26, 1988, before the Senate Committee on Labor and Human Resources:

Question 1. OSHA regulations governing reporting of accidents.

Mr. Pendergrass, prior to the disaster at L'Ambiance, as you know, there had been two other incidents in Connecticut involving this same type of construction, known as the lift-slab method. The first occurred in March 1986 at the Metro Center in Stamford, where a floor slab fell, causing a worker to lose the tips of several fingers. The second incident was at L'Ambiance Plaza in February 1987, where there was found to be a crack in one of the slabs, as well as deformed shearheads. Failure in the lift-slab method was cited as the apparent cause of both incidents.

Yet I note that your regulations require that an employer report accidents to OSHA within forty-eight hours, only in the event of a fatality, or when five serious injuries requiring hospitalization have occurred at a particular worksite. Even then, however, there is no requirement that OSHA investigate such accidents.

Mr. Pendergrass, I know very well that an Executive Branch agency, when it believes circumstances warrant such action, can rewrite existing regulations.

(a) Mr. Pendergrass, do you believe that the regulation in question here represents a strict enough standard for notification to OSHA of construction accidents?

(b) Is OSHA giving any consideration to strengthening that regulation? If not, why?

(c) Do you believe that OSHA should be required to investigate accidents involving serious injuries or fatalities?

Answer:

(a) As I said at the hearing, this is a difficult question. We are certainly open to suggestions for improvements in our present reporting requirements for construction accidents. In the absence, however, of a preferable and viable alternative, I would say that our present reporting requirements represent an appropriate vehicle for notification to OSHA of construction accidents.

Responses to Questions of Senator Weicker:

(b) OSHA has revisited the agency's reporting requirements for job-related accidents a number of times in years past. Despite that reconsideration, no feasible alternative has yet been proposed. As I have said, we would welcome the Committee's recommendations in this regard.

It appears to us that the best way to address the causes of the millions of serious accidents that occur each year, with a view to preventing their recurrence, is through requirements for employer safety and health programs. As part of a good overall safety and health program, an employer should have a system of self-inspection for accidents and should take responsibility for correcting the hazards that caused the accident. OSHA is enforcing the requirement in its construction industry standards that employers have such programs. We issued guidelines to our field staff in June 1987 instructing them on enforcement of this provision.

I wish to assure the Committee that we are open to suggestions and discussion on this issue. However, in the absence of any demonstrably more effective alternative system, we are not considering changing these requirements at this time.

(c) Under its current regulations OSHA requires its compliance officers to investigate every accident involving a fatality. Fatality investigations, after imminent danger situations, are

Responses to Questions of Senator Weicker:

given top priority by the agency in scheduling inspections. Agency regulations also require its compliance staff to investigate all serious accidents that result in five or more hospitalizations. Approximately 2.5 million accidents that are serious enough to result in time lost from work occur each year. It would not be feasible to investigate each of these.

Responses to Questions of Senator Weicker:

Question 2. Vacancy of special assistant for construction.

I understand that the OSHA position of special assistant for construction has been left vacant for the past three years. The responsibilities of the special assistant are to serve as a liaison to industry, to review legislation, to evaluate OSHA's efforts to promote voluntary compliance, and finally to encourage the construction industry to establish occupational safety and health programs.

Why has that position remained vacant, and how soon may we expect that job to be filled?

Answer:

The position of special assistant for construction has been filled since March 14, 1983, by Donald F. Rodgers. While Mr. Rodgers for the past 18 months has been on a concurrent, special assignment for the Secretary of Labor relating to activities concerning the aged, he has been and continues to be available for assistance on issues of concern to the construction industry.

Responses to Questions of Senator Weicker:

Question 3. Number of OSHA inspectors.

Mr. Pendergrass, we cannot bring back the lives of the twenty-eight workers at L'Ambiance, but we can try to prevent another unfortunate accident like this from occurring again. Among the measures we can take are to ensure tougher and more frequent oversight by OSHA.

Specifically, I would like to get into the number of OSHA inspectors you have on board. On March 23, you testified before the House Appropriations Subcommittee on Labor-HHS that you have 1,153 compliance officers -- or inspectors, if you will -- to monitor approximately six million worksites. Last week, you testified before this Committee that you have 1,038 compliance officers. Somehow between March and April you lost 100 compliance officers.

(a) Mr. Pendergrass, how many inspectors do you have on board?

(b) Why is this such a difficult number to ascertain?

Answer:

(a) At the end of March 1988, OSHA had 1,164 compliance officers on board. The figure of 1,153 compliance officers given to the House Appropriations Subcommittee reflected our compliance officer count at the end of February 1988. At the April 20 hearing before the Senate Labor and Human Resources Committee, my response of 1,038 compliance officers referred to December 1987 on-board figures and did not include 56 "11(c)" discrimination investigators whom OSHA had on board at that time. I wish to point out that OSHA has consistently included 11(c) investigators in its count of compliance officers.

The count of OSHA compliance officers for the months of December 1987 through March 1988 follows:

Responses to Questions of Senator Weicker:

	Dec. 1987	Jan. 1988	Feb. 1988	March 1988
Safety	615	641	658	668
Health	423	429	442	443
11(c)	56	55	53	53
Total	1094	1125	1153	1164

As you can see, OSHA has had a net increase of 59 compliance officers between December and February and an additional net increase of 11 from February to March.

(b) There is no difficulty in determining the number of compliance officers that OSHA has on board at any particular time. This information is gathered routinely by OSHA and reported to interested parties. The number of on-board compliance officers changes from month to month as compliance officers leave the agency for one reason or another and as replacement compliance officers are hired.

The number of on-board compliance officers is related to OSHA's annual appropriation from the Congress for full-time equivalent (FTE) staffing authority to carry out the agency's enforcement responsibility. The authorized compliance officer FTE of 1,245 includes the full component of compliance officers needed for the enforcement function, including supervisors and discrimination investigators. When the agency is asked to exclude a specific category such as supervisors or 11(c) investigators from the total number of compliance officers it has on board at any given time, the resultant number will differ from the agency's monthly count of compliance officers.

Responses to Questions of Senator Weicker:

I would also like to clarify another area of confusion inadvertently raised in this question. The approximately six million worksites referred to in the question represent the private-sector worksites covered by both the Federal OSHA program and the states and jurisdictions operating their own federally approved job safety and health programs. Federal OSHA has responsibility for more than three-fifths of those worksites, and, as noted, had 1,164 compliance officers on board at the end of March to monitor those sites. The remaining worksites are located in jurisdictions covered by State OSHA programs which maintain compliance staffs that are at least the equivalent of those maintained by Federal OSHA.

Responses to Questions of Senator Weicker:

Question 4. FY '89 budget request for inspectors; allocation of inspectors for construction.

I understand that the FY '89 budget request includes funding for 1,245 inspectors, which is an increase over the FY '88 level.

(a) Aside from the inspectors you will need as a result of the California plan coming under OSHA's umbrella, is there any increase for inspectors in other States?

(b) Will the total of 1,245 inspectors permit any greater targeting on construction safety?

(c) How many inspectors do you propose for Connecticut in FY '89, and how does that compare with the FY '87 and FY '88 totals?

(d) Can you tell us how many of your inspectors are devoted specifically to construction? If the answer is none, then why, when 58 percent of your inspections are of construction sites, do you have no staff specifically dedicated to performing inspections of construction sites?

Answer:

(a) OSHA's budget request for FY 1988 includes 1,245 FTE for compliance officers. The increase of 38 FTE for a total of 1,283 in FY 1989 is associated with Federal coverage in California.

(b) OSHA continues to evaluate its inspection targeting so that it may utilize its inspector resources in the most effective manner. Such evaluations, including an assessment of construction targeting, will help determine the relative emphasis placed on construction.

Responses to Questions of Senator Weicker:

(c) Because of the changing nature of the safety and health environment, OSHA does not project long-term distributions of inspector resources by State. OSHA had 22 compliance officers on board in Connecticut at the end of FY 1987. The agency is in the process of increasing compliance officer staff in Hartford. As of March 31, 1988, OSHA had 24 compliance officers in the State, with additional staff planned.

(d) No OSHA compliance officer conducts construction inspections exclusively. A significant number of compliance officers have received training in the construction field, and the majority of these devote virtually all of their efforts to inspections in that sector.

OSHA has consciously avoided assigning compliance officers to conduct inspections exclusively in one industry. Our experience has been that employees who come to OSHA as generalists, or as specialists in a particular industry, can become, with appropriate training, effective safety and health professionals, many of whom may subsequently develop or strengthen a specialty but who are capable of effective work in a number of industries. With the variety of skills such an employee provides, the agency can continue to adapt to changing conditions and ensure the flexibility needed for a rapid and effective response to any situation that may arise.

Responses to Questions of Senator Weicker:

Question 5. Qualifications of personnel developing construction standards.

It is my understanding from union representatives that OSHA has given responsibility for developing health and safety standards for the construction industry to individuals who have no on-site expertise regarding construction practices.

If this is the case, can you explain to me how such individuals possess the necessary expertise to ensure the health and safety of workers?

Answer:

The professional staff of OSHA's Directorates of Health and Safety Standards have the necessary expertise to draft health and safety standards which ensure the health and safety of workers. Because of the diversity of the construction sector -- the many different job categories that are included in the industry and the wide range of safety and health issues that arise in it -- on-site experience in one area of construction would not provide the broad safety and health expertise required in OSHA's standards development activity. While the agency's professional staff members who prepare construction regulations may not have had experience working directly on construction projects, they have all had experience or education and training in fields relating to occupational safety and health. All of them have the ability to conduct the extensive research required to develop proposed rules -- the first step in promulgating construction safety and health standards.

During the research and development phase of every construction rule -- whether it be a new regulation or an

Responses to Questions of Senator Weicker:

addition, revision, or deletion to an existing regulation that is under consideration -- OSHA's Standards Directorate professional staff members working on the rule meet with the agency's Advisory Committee on Construction Safety and Health to seek its advice and recommendations. These staff members also seek the advice of workers, employers, agency compliance officers, and other individuals who are knowledgeable about construction site practices. During the drafting process, staff working on construction standards often make site visits to observe existing practices with regard to the area being proposed for regulation.

After a proposed construction standard is published in the Federal Register, anyone who believes that the proposed regulation would not ensure the health and safety of workers has the opportunity to write to OSHA or appear at a public hearing to comment on how the proposed standard should be improved. Union representatives are among those who regularly avail themselves of this opportunity when they believe a proposal published by OSHA should be improved.

Responses to Questions of Senator Weicker:

Question 6. Use of a professional engineer or architect on construction sites.

Mr. Pendergrass, we have heard from previous witnesses today that if a professional engineer had been at the L'Ambiance construction site, the disaster might have been avoided. Further, the committee appointed by Governor O'Neill to report on the accident recommended that in the future, an independent engineering consultant should be assigned by the municipality to review the plans of the project, and conduct field inspections as necessary.

Further, I have a memorandum from Mr. James Lapping, a member of the OSHA Advisory Committee on Construction Safety and Health (ACCSH) to the other members of ACCSH recommending the following: "The general provisions for concrete construction should require a registered engineer/architect to design and oversee the construction, to ensure that the engineering design plans are complied with, during all concrete construction, and that the engineer have the authority to shut down the job in the event the plans and specifications are not being complied with."

Finally, I have an OSHA memorandum dated June 19, 1978, from Donald E. MacKenzie, a Regional Administrator, who set guidelines for OSHA inspectors after the accident at Willow Island, West Virginia. He recommended "...the use of (an) OSHA specialist engineer/consultant where needed to assist the local compliance officers in the assessment of technical operations."

Obviously, there is widespread agreement that a standard requiring the involvement of a professional engineer is appropriate.

(a) Do you agree with these recommendations? Is OSHA considering establishing a regulation to require the involvement of an engineer in the ongoing oversight of construction projects?

(b) What has OSHA done in response to the Advisory Committee's demand?

Answer:

With regard to the recommendation that OSHA's proposed revision to its concrete and masonry construction standard include a requirement that a professional engineer/architect

design and oversee concrete construction, the current OSHA standard provides as follows:

> Imposition of any construction loads on the partially completed structure shall not be permitted unless such loading has been considered in the design and approved by the engineer-architect. [29 CFR 1926.701(a)(4)]

The various recommendations for use of a professional engineer/architect at construction sites are being addressed in our proposed revision of the concrete and masonry construction standard. Drafts of the proposed rule were reviewed by the Construction Advisory Committee in November and December 1987. We are actively considering the recommendations of the Committee along with those of the other interested parties who have commented for the public record on this issue. I am not at liberty to reveal the contents of the final rule until such time as it has been promulgated. We expect that the revised regulation for concrete and masonry construction will be published shortly. I will keep you advised on this matter.

With respect to former Regional Administrator Donald E. MacKenzie's recommendation that OSHA use a "specialist engineer/consultant where needed to assist" compliance officers in assessment of technical operations, OSHA routinely does precisely that. If, in the course of a particularly complex assignment, an OSHA supervisor or compliance officer believes that he does not have the necessary knowledge, the Area Office may employ a variety of outside sources of expertise including that available in other Area Offices or Regional Offices, other government agencies, and the private sector.

Responses to Questions of Senator Weicker:

Question 7. FY'89 OSHA budget request to the Department and to OMB.

Mr. Pendergrass, since you will not have the opportunity to testify before my Appropriations Subcommittee on your FY'89 budget, I have a few questions on that subject I would like to ask you.

(a) What was your total request for OSHA to the Department of Labor, and the Department's request to OMB? Was that figure reduced at either the Departmental or OMB level?

(b) If so, what rationale was given?

Answer:

(a) OSHA's original budget request to the Department of Labor for FY 1989 was $255,616,000. After technical pricing adjustments, the Department's FY 1989 request to OMB for OSHA was $256,921,000. OSHA's request to the Department was based upon plans supported by the agency's revised FY 1988 budget request of $245,860,000. The Administration's request for OSHA is $244,851,000, which reflects program priorities within the level of resources available under the bipartisan budget agreement.

(b) In December 1987, long after the submission of OSHA's FY 1989 budget, Congress enacted a FY 1988 appropriation that provided $11,686,000 less than the President's FY 1988 budget request for OSHA, as part of the agreement with the Administration to address the budget deficit. As a consequence, OSHA's final FY 1989 budget request reflects the impact of the FY 1988 funding decreases as well as other program priorities within the level of resources available under the bipartisan budget agreement.

Responses to Questions of Senator Weicker:

Question 8. OSHA handling of fines.

As Mr. Williams from the AFL-CIO noted before this Committee last week, the well-publicized large fines and major citations would have led some to believe that OSHA has gotten tough and aggressive about enforcing safety and health standards. But upon closer examination, it is clear that the majority of strong enforcement actions have come about in response to a tragedy, a union complaint, a situation subject to media attention or where there is a particularly aggressive inspector or Area Director.

(a) How would you respond to this statement?

(b) Do you believe stiffer fines are the best way to ensure compliance with safety and health standards -- or is more aggressive enforcement by OSHA the key?

Answer:

(a) Recent major citations involving large proposed penalties are attributable to OSHA's efforts to increase the deterrent effect of its enforcement activities. Since March 1986, OSHA has been using revised procedures to assess penalties for willful or repeat violations, for high-gravity serious violations and for failure to abate previously cited violations. As a direct result of this change, OSHA has proposed high penalties in a number of cases involving particularly egregious violations of both safety and health standards and recordkeeping requirements. Our intent is to emphasize the seriousness of standards violations and to make clear to employers that OSHA believes that adherence to recordkeeping requirements is essential to the provision of safe and healthful workplaces.

Responses to Questions of Senator Weicker:

Although some of these cases have received media attention, such attention, regardless of scope, in no way dictates the size of proposed penalties. The agency's criteria for determining penalty amounts are established by the Occupational Safety and Health Act and by regulations and procedures issued under the Act and are set forth in OSHA's Field Operations Manual. Personality traits of individual compliance officers do not affect the implementation of these regulations and procedures, which are implemented in a uniform manner so as to assure equal protection to all workers covered under the law.

(b) We consider the higher penalties assessed as a result of the revised penalty process to be indicative of a more aggressive enforcement posture by the agency. This policy serves to increase the deterrent effect of a single inspection and lets employers know that OSHA will take vigorous action in response to willful and serious violations of OSHA regulations.

Responses to Questions of Senator Weicker:

Responses to Questions of Senator Weicker:

Question 9. OSHA shutting down dangerous operations.

Mr. Pendergrass, it is my understanding that even if a worker is involved in a dangerous or life-threatening operation, that the inspector onsite does not have the authority to shut down the operation, but instead must wait for an injunction from the courts. Thus days can go by while this hazardous condition exists, even while lives are at stake.

(a) Do you believe that the statute should be amended to give OSHA inspectors the authority to shut down the worksite in situations where there is imminent danger to the workers at that site?
(b) If you disagree, what would you support in the way of modifications to the statute to enhance OSHA's ability to respond to imminent danger situations?

Answer:

We believe that OSHA has sufficient authority under section 13(a) of the Occupational Safety and Health Act to address situations that require an immediate response. Under that section of the Act, the agency is required to petition a U.S. District Court before it may prohibit employment under conditions which threaten immediate harm to workers. Under that authority, OSHA has been able on numerous occasions to prevent imminent dangers to workers. The agency has sought court orders only when it was not possible to address a workplace hazard in any other manner.

Generally when OSHA notifies an employer that an employee is in a situation that poses imminent danger, the employer removes the employee from the situation voluntarily. Only in limited instances has it been necessary for the agency to seek

Responses to Questions of Senator Weicker:

a court order. In such instances, OSHA has acted aggressively and successfully to prevent harm to employees. Therefore, we believe that no additional authority is needed to order cessation of work.

Senator DODD. There has been a request by Senator Simon to hold the record open for statements by other Senators on the Committee, and without objection that request will be complied with. We will also insert additional material for the record at this point.

[Additional statement for the record follows:]

April 25, 1988

Re: L'Ambiance Collapse

Texstar Construction Corporation is requesting that your Subcommittee recommend legislation for the appointment of an independent panel of professional experts to review the NBS report and investigate fully the cause of the L'Ambiance collapse.

Critical information was reported Sunday, March 13, 1988, by the Hartford Courant Newspaper concerning key witness testimony on the fundamental theory of what triggered the L'Ambiance Building Collapse. The article supports the contention of Texstar that the NBS and OSHA report and its' most probable cause scenario is wrong and inaccurate.

The factual information contained in the article is correct and supports information Texstar accumulated shortly after the collapse. Texstar had discussions with NBS and OSHA about this information but has not been in a position to make public comment due to court actions and pending litigation. OSHA and NBS interviewed the three witnesses a number of times and the information was available to both agencies. OSHA and NBS chose to ignore or to intentionally withhold this information to promote the validity of an inconclusive report.

Texstar was shocked by that part of the article which revealed that Richard D. Marshall, one of the NBS investigators had offered a third senario. The new theory was not included in the bureau's report which was made public in October. The NBS report should now be fully investigated along with the bureau's personnel charged with responsibility for preparing the report. Previous newspaper reports revealed that Charles Culver, the NBS individual primarily responsible for the report, had been seeking employment with OSHA and serious questions have been raised as to his impartiality and fairness in conducting the investigation and preparing its' report. This latest development of intentionally withholding information about a third senario and the conflict of interest issue raised by Charles Culver, supports Texstar's position that further investigation and testing is absolutely necessary. Texstar suggests that it is now time for John Miles, Regional Director of OSHA and Charles Culver of NBS who both orchestrated the report to step aside from further participation and OSHA under the auspices of Congress with the approval of the Secretary of Labor appoint an independent panel of professional

experts to review the report and investigate fully the cause of the collapse.

Texstar agrees that the new information seriously damages the governments' case. However, Texstar believes that it is far more important that the actual cause or causes of the collapse be determined.

Texstar and its related companies have erected some 600 projects and completed 800 buildings involving 62,000,000 square feet over the past thirty-five (35) years. Texstar has never suffered a fatality and experiences one of the lowest workman compensation rates in the construction industry. Furthermore, eighteen (18) lift slab projects have been completed in the state of Connecticut. Texstar has lifted in Connecticut buildings involving four (4) stories to the highest project involving seventeen (17) stories. The average number of stories for Connecticut projects has been nine (9) stories high. The amount of construction involves approximately 2,500,077 square feet of lifted area. Additionally, lift slab operations are conducted world wide and involve millions of square feet lifted in Canada, England, Holland, West Germany, East Germany, Russia, Hungary, Yugoslavia, Czechoslovakia, Bulgaria, Romania, Mexico, Brazil, Venezuela, Columbia, Australia, Indonesia.

Over a year has gone by since the collapse, the National Bureau of Standards has issued its report stating what it believes to be "the most probable cause". Since this report has come out, the general reaction, including the Governor of Connecticut's Building Construction Advisory Committee and various politicians, has been to take the finding of the report as fact. In fact, I doubt that many members of your committee have even reviewed the report. In summary, the lift slab method is being legislated out of existence based upon a mere accusation contained in the NBS report which contains numerous inaccurate statements along with faulty testing data and information.

The newspaper article mentioned above is the beginning of the disclosure as to how inaccurate the NBS report is. Do we really know what happened at L'Ambiance? Did OSHA investigate the cause thoroughly and impartially? If you or your staff will take the opportunity to read the report and the information which is now appearing in professional magazines and newspapers, you will recognize the lack of conclusive evidence supporting their probable cause scenario. NBS used words like "probable", "could have", and "assumed" twenty-nine (29) times in the critical five (5) pages covering the cause of the collapse and over one hundred fifty (150) times in their report.

You can write a book regarding the inaccurate statements, information and conclusions contained in the NBS report. One item which the NBS places great significance on is the eccentric loading of the lifting angles. Texstar is ready to present evidence to the committee that the test conducted by OSHA were not based on field conditions. The shearheads tested were damaged significantly and the tests did not simulate the actual procedure in the installation of the lifting rods. The rods were not properly loaded in accordance with field conditions. In effect, NBS calculated the safety factor using damaged shearheads and procedures which never existed in the field. Second, OSHA and NBS failed to conduct a proper analysis of the foundation. NBS chose to inspect less than twenty (20%) percent of the footings and completely ignored the field conditions which existed on the date of the collapse as to the water on and about the surface. Any rotation or slippage of any of the footings in the foundation would have easily triggered the collapse. There is sufficient evidence from various contractors and employees on the job site that the foundation constituted a potential problem on the date of the collapse. A third area which the NBS report does not adequately address is the slab reinforcing. The tendon placement drawings confirmed that the tendons were installed incorrectly. The engineering firm retained by OSHA has publicly stated there should have been further analysis conducted in this area.

Texstar appeals to the committee to investigate OSHA and determine whether the cause of the L'Ambiance collapse has been determined in a thorough and impartial manner. I appeal to this committee to interview and question professionals, both engineers and architects, who have the technical expertise in this area. Texstar and its employees offer to meet with the committee and furnish information regarding the lift slab method, its safety history, the extent of its use world wide and the inaccuracies in the OSHA investigation.

I understand that it is easy to take the political, expedient way which provides you with the most media coverage. The most difficult road is to promote a fair and impartial investigation into the cause of the collapse. I would hope that the committee would give this request for the appointment of an independent committee careful consideration. You should also be aware that on this date the federal court has authorized OSHA to continue further investigation. It is apparent that OSHA intends to proceed with this additional investigation and it is imperative that any future testing be done by an impartial and independent committee. Delay by this committee may very well result in the cause for the collapse being lost by further

bureaucratic and administrative incompetency.

Very truly yours,

DAVIS & TURLINGTON, INC.

David T. Turlington

DTT:kb

The Hartford Courant

DAILY EDITION, VOL. CLI NO. 73 SUNDAY, MARCH 13, 1988 – 15 SECTIONS FINAL COPYRIGHT 1988, THE HARTFORD COURANT

Witnesses cloud L'Ambiance probe

By BRANT HOUSTON and MIKE McGRAW
Courant Staff Writers

© 1988, The Hartford Courant

Federal investigators' fundamental theory of what triggered the collapse of L'Ambiance Plaza is being questioned as a result of new information provided by three witnesses to the building's collapse.

The questions raised by the information potentially challenge the two scenarios federal investigators offered in their report on the accident that killed 28 workers on April 23, 1987, sources familiar with the investigation say.

The three witnesses were interviewed by investigators last year, but it is unclear whether the issue came up in any of the interviews. The information and its possible significance was not included in the federal report issued in October.

The new information suggests that construction of the Bridgeport apartment building was at a different stage than investigators from the National Bureau of Standards said it was.

The report has been the basis for $5.1 million in federal safety fines against contractors involved in L'Ambiance Plaza and for possible criminal charges against one of those contractors.

About $4.8 million of the fines were based on investigators' findings that the failure of a key component of a lifting system used to hoist concrete floor slabs probably caused the collapse.

The new information could damage the case for possible prosecution and provide evidence for a lessening of the fines, which are based largely on the allegation that the failure of the component, known as a lifting angle, led directly to the deaths of the workers.

Engineers from the bureau of standards have defended their report, citing eyewitness accounts, evidence collected from the site, and extensive laboratory tests.

"The report speaks for itself," Charles G. Culver, the leader of the bureau's investigation, said Saturday. He said he could not comment further because of pending litigation against the contractors.

John Miles of the U.S. Occupational and Safety Health Administration, also stands firmly behind the bureau's conclusions.

"I think they [lifting angles] caused the collapse," said Miles, OSHA's top official in New England. "I stand behind everything the NBS did."

The bureau's two published scenarios of the accident assumed that a lifting angle failed at one of two places in the building.

According to one of the scenarios, the accident probably began when a

See Witnesses', Page A17

Witnesses' accounts cast doubt on federal L'Ambiance report

THE HARTFORD COURANT: Sunday, March 13, 1988 A17

Continued from Page 1

lifting angle at a column deformed under the weight of the slabs and a support rod slipped out. Or, the bureau report said, a lifting angle deformed at a nearby column when workers on top of the building turned on a powerful jack that pulled too hard on the angle.

But the new information suggests the slabs' weight was not on the lifting angle at one location and undercuts the investigators' theory on how a lifting angle failed at the nearby column.

Sources familiar with the investigation say some investigators are concerned the new information could hurt the bureau's theory.

An engineering consultant to the bureau's investigation has criticized the bureau for producing an incomplete report. Contractors also have criticized the investigation for using damaged materials in tests. But this is the first time questions have been raised about the evidence for the agency's theory of the probable cause of the collapse.

L'Ambiance Plaza was being constructed with the lift-slab method, in which floor slabs are poured at ground level and hoisted to their correct height by hydraulic jacks atop steel columns. The jacks lift the slabs by two rods at each column. The rods are attached to a steel collar, known as a shearhead, embedded in the slab.

The bureau report said a critical area of three concrete floor slabs was hanging from the steel support rods when the building collapsed. The report said the floors gave way when a support rod slipped loose after a lifting angle, a U-shaped bracket inside the shearhead to which the rod was attached, deformed under too great a load.

The report said the load came from the weight of the slabs or from a hydraulic jack pulling too hard on a rod connected to the lifting angle.

But recent interviews with a key eyewitness, and two other witnesses, suggest part of the critical area of the slabs was actually resting on steel wedges placed under the slabs. That meant the slabs' weight at that location was not on the lifting angles the investigators have said triggered the collapse.

If the slabs were resting on wedges at that location, the scenario in which a nearby hydraulic jack deforms a lifting angle is questionable. Investigators theorized the jack was being used to help raise the slabs because the jack at the first column was not strong enough to raise the portion of the slab by itself.

"What this means, is that a number of factors should be examined and re-examined," said Antranig M. Ouzoonian, an engineering consultant hired by The Courant. "It does not eliminate their findings as a key component of the collapse, but it raises questions on whether they found what triggered the collapse."

Richard D. Marshall, one of the bureau investigators, defended the report Friday and offered a third scenario that supports the report's findings but was not included in the report.

Marshall said that if the powerful jack was not being used exactly at the time of the collapse, the wedging procedure still could have led to a failure of a lifting angle. He said that if the slab was lowered only at the first column, it could have produced too much load on the lifting angles at the nearby column.

That theory was not included in the bureau's report, which was made public in October.

"You have to keep in mind that we have that qualifier, that this is the 'most probable' cause of failure," he said.

But Marshall said he believes the failure of a lifting angle triggered the collapse.

Worker's account

A worker who was near the top of the building but survived the collapse, said recently that his co-worker was welding wedges to a column just under a steel collar embedded in a slab.

Kenneth Shepard, considered a key eyewitness by the investigators who produced the federal report, said last week he had placed wedges under the slab and that his co-worker, Joseph Lowe, had begun welding before the collapse. Lowe died in the accident.

Under standard procedures, which are outlined in the federal report, welding would not begin until the slabs' load was transferred from the lifting angles to the wedges.

"Joe Lowe had his helmet [visor] down," Shepard said. "I had my head down so I wouldn't look at the flash [of the welding tool]."

The federal report said investigators found no sign of welding on that column, but Marshall acknowledged Friday that Lowe could have started welding on the wedges, which were not found.

An official of the contractor that has been blamed most for the collapse — and which could face criminal charges — said the information seriously damages the federal government's case.

"What this means is that the wedges were in, the loads had been released [by the jacks] and Lowe would have been in the process of tacking [welding] the wedges, which is something he did not have to do immediately," said Chris Geckler, a vice president of Texstar Construction Corp., based in San Antonio, Texas. "He could have taken two or three minutes to tack it. He could have stopped and had a cigarette [before welding]."

In addition, two other workers, both supervisors for Texstar, said they heard Lowe's welding machine turned up just before the collapse.

The supervisors, James Garretson and Kenneth Brett, said Saturday they were both near Lowe's welding machine, which was located at ground level, and heard the machine's power increase.

"I heard the revving up of the engine, which happens when they are welding, and then the noise of the building and then the building fell," Garretson said.

Added Kenneth Brett: "The motor revved up on it right before everything started."

Independent sources familiar with the investigation disagree whether investigators were given Garretson's testimony. But those sources agree there is evidence workers were welding or about to weld at the time of the collapse.

Federal investigators have said Geckler and his company were most at fault for the collapse because they oversaw the fabrication of the steel collars containing the lifting angles and Texstar was in charge of the lifting of the floor slabs.

OSHA has fined Texstar $2.5 million for alleged safety violations at the site, including $10,000 for each of the 238 lifting angles OSHA said were unsafe.

The new evidence does not contradict the bureau's findings that the lifting angles did not meet federally required safety standards.

Geckler and other Texstar officials have attacked the report vigorously, charging it was incomplete and inaccurate, but they have not brought up the question of whether workers were welding.

When questioned about the issue last week, Geckler said that Texstar had confronted federal officials in December about the possible discrepancy, but Texstar officials had withheld public comment until they could reinterview Shepard.

Geckler said he told Culver that workers were welding at the time of the collapse. But, he said, Culver told him there was no sign of welding on the column at which Lowe was working.

Lifting slabs

On the day of the collapse, a package of three slabs had been lifted near the top of the building's west tower. During the morning, workers began placing wedges and welding them at each of the 25 columns in the west tower, one at a time.

The procedure generally consisted of lifting slabs a quarter inch to half an inch at a column, placing two wedges beneath the bottom slab, and shifting the weight of the slabs onto the wedges. The workers then would tack weld the wedges to the columns.

Tack welding is a method of temporary welding on lift-slab projects in which the steel is welded only in small spots, allowing the weld to be broken later.

The jacks at L'Ambiance were lifting slabs in packages of two or three at a time. During the lifting, slabs were temporarily "parked" at different levels by placing wedges under the steel collars.

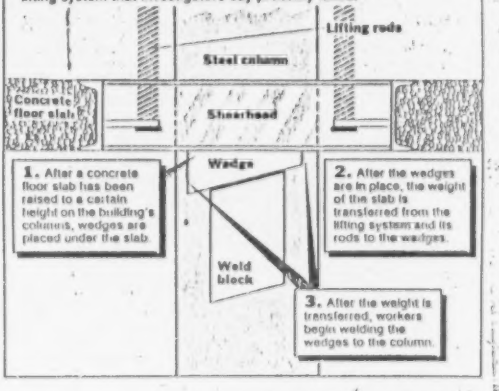
The workers left for lunch after welding wedges at about half of the columns. After returning from lunch, Shepard said, he and Lowe continued the procedure and they were at a column near the center of the building at the time of the collapse about 1:30 p.m.

The bureau report said that an ironworker was installing wedges at the time of the collapse. Culver said Saturday that investigators had interviewed Shepard several times.

Bureau engineers said a powerful jack at a nearby column might have been used to help the wedging procedure at Shepard's column because the jack there was not strong enough to raise that part of the slab by itself. Geckler confirmed that workers sometimes used a second jack in that area of the slab, but said he does not think they used the second jack that day.

■ New information raises questions about the two scenarios offered by federal investigators for the probable cause of the L'Ambiance Plaza collapse. The information suggests that work may have been at a different stage of construction than investigators had assumed.

Instead of installing wedges, the workers might have been welding, meaning the weight of concrete slabs might not have been on the lifting system that investigators say probably failed.


Lifting rods
Steel column
Concrete floor slab
Shearhead
Wedge
Weld block
1. After a concrete floor slab has been raised to a certain height on the building's columns, wedges are placed under the slab.
2. After the wedges are in place, the weight of the slab is transferred from the lifting system and its rods to the wedges.
3. After the weight is transferred, workers begin welding the wedges to the column.

Chris Butler / The Hartford Courant

state had considered dividing the highway into two sections, financing part of it with federal funds and the other part with toll revenue.

Dowd says that tolls to be collected on the highway for its first 20 years of operation will provide about one-third of the project's total cost. Most of the remaining money will come from Interstate transfer funds from a canceled I-420 project, from state revenue bonds and from Metropolitan Atlanta Rapid Transit Authority funds. MARTA says it plans to run twin heavy-rail transit lines in the median of the expressway.

DOT has acquired about 45% of the right-of-way for the highway, but it expects the remaining 55% to be expensive. Dowd says land acquisition costs will account for "more than half" of the project's total cost. Some right-of-way, he notes, is expected to cost $50 to $60 per sq ft.

The department expects to begin construction on a critical link in the project—a bridge over Peachtree Road—this summer, and a railroad bridge and relocation project will follow by the end of the year. Work on the rest of the project is likely to begin early next year. ■

HIGHWAY FINANCING

Indiana sets precedent to raise road money

For the first time in Indiana's history, the state is empowered to issue bonds to finance the construction of highways other than toll roads. The decision followed two months of bickering in the legislature.

The bonding provision is part of a package aimed at reducing a backlog of primary highway projects that Daniel Novreske, chief deputy director of the Indiana Dept. of Highways, estimates would cost more than $1.2 billion. The Highway Finance Authority will sell the bonds and lease the roads back to the state highway department.

Indiana also will raise taxes on gasoline and diesel fuel 1 cent per gallon and boost the motor carrier diesel surtax 3 cents per gallon. These changes are expected to provide about $45 million per year.

State officials anticipate that they will be able to spend up to $360 million on construction over the next four years. Between $80 million and $90 million is expected to be available this year. ■

STRUCTURAL FAILURES

Probe of L'Ambiance Plaza called biased, incomplete

Almost a year after L'Ambiance Plaza collapsed, criticism of the federal investigation and the report it produced is still raising questions about what happened in Bridgeport that day.

The project's contractors, some facing heavy fines, say the National Bureau of Standards' report is based on faulty lab tests and an incomplete study of the site. Engineers unconnected with the contractors also contend that the report is deficient and that uncertainty about the causes may grow as the parties involved prepare for legal proceedings.

The contractors suggest that the NBS report, written at the request of the Occupational Safety and Health Administration, draws its biases from OSHA's desire to look tough by hitting the contractors with heavy fines. The report says the most probable cause of the collapse was the deflection of an overloaded steel angle on a shearhead. The deflection allowed a jack rod and lifting nut to slip free, initiating a chain reaction, NBS says. OSHA has proposed a total of $2.5 million in fines, most of which will be contested (ENR 10/29/87 p. 10).

Texstar Construction Corp., San Antonio, was the subcontractor responsible for lifting the slabs. Chris A. Geckler, executive vice president of Texstar, says that tests performed on shearheads removed from the debris failed during the NBS laboratory tests partly because the shearheads were damaged during the collapse.

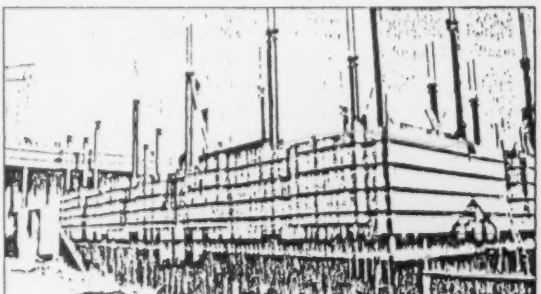
Geckler says NBS assumed too much eccentricity in the shearheads' loading. He also says the tests failed to replicate the actual field conditions of a shearhead confined in a concrete slab.

Geckler contends that the jack rod and lifting nut were pushed snugly into the lifting angle by ironworkers who slipped wooden boards between the nut and the columns. "The assumption is that the workers installed these incorrectly, and we say that did not happen," Geckler explains.

Post-tensioning. Geckler also believes the splayed design of post-tensioning cables in floor slabs in the west tower of L'Ambiance Plaza may have contributed to the collapse. The longitudinal cable, running along the column line where NBS says the collapse may have started, divided to avoid an elevator shaft opening.

Geckler believes the drape of the transverse cables may not have been adjusted properly to compensate for the stresses created by the splaying. Doubts about the post-tensioning were first raised by an engineer who acted as a consultant to NBS investigators.

Sources familiar with the project ex-



Slabs await jacking at apartment building in Bridgeport during weeks preceding collapse.

press skepticism about the possibility that post-tensioning played a major role in the failure. They say that any problems would have shown up as the slab was being jacked for the first time, long before the collapse. James O'Kon, president of O'Kon & Co., the project's Atlanta-based structural engineer, says that splayed post-tensioning cables around slab openings is common.

The post-tensioning was designed and installed by Prefotee Corp., New York City, which declines to comment. O'Kon & Co. was not called by OSHA, and O'Kon says his role during construction was a small one.

Still another criticism of the report involves foundation conditions and the effects of lateral earth forces on the structure. Michael Fratoli, president of Elmsford, N.Y.-based Lift Frame Builders Inc., says the fact that NBS investigators did not conduct thorough subsurface research means the investigation is incomplete. Lift Frame was responsible for building the columns and floor slabs at L'Ambiance Plaza.

Fratoli also believes that the reserve capacity of the shear walls may not have been great enough to resist all the forces that the walls were subject to. Fratoli says the shear walls may have shifted or failed if they were subject to unexpected soil pressures acting on a basement retaining wall. The NBS report concludes that such an event was "unlikely."

Follow-up. In the past, NBS has never done a complete turnaround on its conclusions from an investigation, but it has issued a supplementary report that altered the perspective on an initial study. That was what happened with the investigation into a cooling tower accident in West Virginia in 1978, in which 51 workers died. The follow-up report on that accident, issued in 1980, suggested that a combination of factors, rather than inadequately cured concrete alone, was responsible for the tragedy. An NBS official who investigated the West Virginia accident denies that he changed any conclusions in the original report.

The collapse of L'Ambiance Plaza, in which 28 workers died, is considered a more perplexing failure. Charles G. Culver, the chief investigator for NBS, stands by his report and says that none of the failure scenarios suggested by his critics fit in with the visual and oral evidence.

Culver says he doesn't want to debate the report in the media, and adds that he is willing to change his view if the criticisms can be documented in detail. ■

By Richard Korman

Aviation

EPA goes slow on removal

The U.S. Environmental Protection Agency released new figures last week showing that 20% of all public and commercial buildings in the U.S. contain potentially dangerous levels of asbestos. But the agency stopped short of recommending legislation requiring owners to inspect and clean up the carcinogen.

About 14% of the 733,000 buildings with asbestos contain damaged fibers that could be released easily, while 9% have "significantly damaged" asbestos, says EPA. The information is part of a congressionally mandated report. The figures were extrapolated from a 1984 sample of 231 buildings nationwide, according to John A. Moore, EPA's assistant administrator for pesticides and toxic substances.

In a letter accompanying the report, however, EPA Administrator Lee M. Thomas cautioned against a program of mandated asbestos inspection and removal similar to the one instituted for schools. "If we are not careful, we will stimulate more asbestos removal actions in public and commercial buildings over the next few years than the infrastructure of accredited professionals and governmental enforcement can handle," says Thomas.

He adds that children appear to run the greatest risk of contracting mesothelioma, an asbestos-linked cancer, noting that "this is why the school regulations . . . established a carefully structured process by which case-by-case determinations are made by trained professionals." The current inspection and removal program for 35,000 school buildings with asbestos costs $3 billion, says EPA. Instituting a similar removal program for all public and commercial buildings would cost about $51 billion.

Thomas recommends beefing up the nation's ability to deal with asbestos by increasing the number of accredited asbestos inspectors and abatement professionals at a cost of $6 million over three years.

The EPA administrator also calls for revamping thermal insulation, improving the enforcement of existing regulations and making an "objective" assessment of the school asbestos removal programs that have been carried out so far.

Criticism. EPA's stance drew criticism from both labor unions and building owner trade groups. The agency's "refusal to act [will] deny workers and other building occupants their right to know about the hazard," says John J. Sweeney, president of the 850,000-member Service Employees International Union.

The Building Owners and Managers Association claims that the agency's inaction leaves many owners and tenants uncertain about how to handle asbestos. "I realize there are no short-term solutions to a long-term problem, but the marketplace is crying out for an interim solution and the public's anxiety must be alleviated," says Douglas A. Greenaway, BOMA's vice president for government affairs. "EPA is basically telling the commercial side to solve the problem on its own," adds Scott Muldavin, a real estate consultant in San Francisco.

Others contend, however, that EPA's action was prudent in the absence of more detailed studies of asbestos in commercial and public buildings. "There is so much hysteria," says one industry observer, "that EPA is trying to get the cork back in the bottle." ■

By Peter Hoffmann in Washington and Debra K. Rubin in New York

Thomas: More inspections not needed now.

L'Ambiance builder attacks report

By BRANT HOUSTON and MIKE McGRAW
Courant Staff Writers

The construction company accused of being most at fault in the collapse of L'Ambiance Plaza is making its first detailed assault on the federal investigators' report on the disaster.

Officials at Texstar Construction Corp., based in San Antonio, Texas, say engineers at the National Bureau of Standards used damaged materials to determine that Texstar's lifting system was flawed and mistakenly assumed that workers improperly installed steel rods used to lift the concrete floors.

The officials, Chris Geckler and Michael Russillo, both Texstar vice presidents, said bureau engineers did not test the lifting system in their laboratories under conditions that existed at the Bridgeport collapse.

The bureau then used all the findings to establish an incorrect safety factor for the lifting system at L'Ambiance, Texstar officials said. A safety factor is the amount of load the lifting system is supposed to be able to support above and beyond the actual load it is expected to support.

That calculation led the U.S. Occupational Safety and Health Administration to fine Texstar $2.38 million for alleged safety violations at L'Ambiance Plaza. Twenty-eight workers died when the partly-finished apartment building collapsed April 23, 1987.

Charles G. Culver, the lead investigator for the bureau, said through a bureau spokesman that he would not comment on Texstar's allegations until they were put in writing and even then, he said, it might be inappropriate to comment.

A bureau spokesman, Mat Heyman, added that because the bureau is providing technical support for OSHA's legal action against Texstar,

See L'Ambiance, Page A6

2 Texstar officials fault testing that prompted $2.38 million fine

Continued from Page 1

It would be foolish for bureau engineers to comment, OSHA hired the bureau to find the probable cause of the accident.

Michael Frabill, the president of LiftFrame Builders Inc. a company fined $104,000 by OSHA for alleged safety violations at L'Ambiance Plaza, said he agrees with Texstar. Frabill's company was in charge of pouring concrete floor slabs at the project.

In addition, Ted Brainard, a business manager for the Ironworkers Union Local 424, who was at L'Ambiance along with other members of the union, agreed with Geckler and Russillo. He said the ironworkers installed the rods properly.

Both Texstar and LiftFrame officials also have said the foundations at L'Ambiance Plaza were not checked thoroughly by the bureau. OSHA fined the general contractor, H.H.H. Macomber, $1,000 for a safety violation on the building's foundation.

Geckler and Russillo previously have criticized the bureau and its report, saying it was inaccurate and incomplete. But only recently have they offered specific, technical information in their rebuttals.

In the past, Culver, chief of the bureau's structures division, has defended the bureau report, which was released in October. The report said a key component of the Texstar lifting system probably failed, initiating a chain reaction that led to the total collapse of the structure.

'Eccentricity'

L'Ambiance was being constructed with the lift slab method in which concrete floor slabs are poured at ground level and then lifted to their correct height by hydraulic jacks atop steel columns.

Each jack helps lift the slabs by pulling up on two steel rods. The rods are attached to steel collars, called shearheads, which are imbedded in the slabs and each one encircles a column.

The rods are attached to the shearheads by being pushed into a U-shaped bracket, called a lifting angle, which is welded inside the shearhead. A nut at the end of the rod is tightened underneath the lifting angle to keep the rod in place.

Bureau engineers said the load on the lifting angles was too great the day of the L'Ambiance collapse, causing a lifting angle to tip up and allow a rod to slip out.

The "kick out" of the rod, the bureau said, caused the slab to drop and other rods to kick out.

As a part of their investigation, Culver and his engineers assumed in some of their tests that the rods were not pushed all the way into the bracket, according their report and interviews.

The bureau called that factor "eccentricity" and found that if the rod is not pushed all the way in, even by fractions of an inch, the rod is more likely to kick out.

Last week Geckler and Russillo attacked Culver's assumption of "eccentricity," saying the rods are routinely pushed all the way in by workers using wooden 2-by-6s braced against the columns. The slab then is lifted about a fourth of an inch, then pulling the nut tight against the lifting angle, they said.

After all the rods are installed, a foreman or another Texstar worker walks across the top of the slab, looking down to make sure all rods are pushed all the way in. If a rod is not completely in, the procedure is repeated for that rod, they said.

"It is very important to state that we feel the homeowners and work force at L'Ambiance were some of the best we had ever worked with," Geckler said. "Those workers were doing their job."

Brainard said of Texstar's comments about the use of two by fours, "That is absolutely factual. It was a cardinal rule. I with I had a dollar for every time we did that."

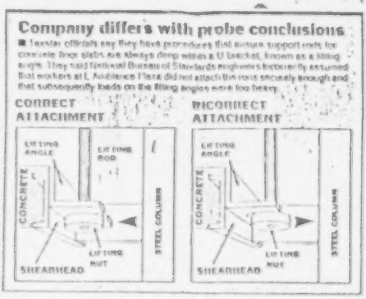
Brainard added, "The [bureau] report is baloney. I never saw one [a rod] that wasn't locked in tight."

Ken Byrd, a foreman at L'Ambiance Plaza, said he personally inspected the rods' installation before slabs were lifted the day of the collapse. He said the rods had all been pushed in.

Geckler and Russillo said Culver should have known about the procedure from interviews conducted by OSHA and given to the bureau. They said they also told Culver about the installation of the rods after the report was released.

Company differs with probe conclusions

■ Texstar officials say they have procedures that ensure support rods for concrete floor slabs are always deep within a U bracket, known as a lifting angle. They said technical Bureau of Standards engineers incorrectly assumed that workers at L'Ambiance Plaza did not attach the rods securely enough and that subsequently loads on the lifting angles were too heavy.



Damaged collars

Russillo and Geckler also said the bureau used significantly damaged shearheads in four of the five tests the bureau ran. Geckler said those shearheads were damaged in the collapse.

Texstar officials said that a photograph in the bureau report of one shearhead clearly shows a gouge in it that was caused by the collapse. They said, in that case, the gouge flawed the test.

They said another test was flawed because the shearhead was not encased in concrete, which would have given it additional strength. In that test, they said, the rod was pushed in almost all the way.

"He [Culver] tested a safety factor that was wrong in many cases," Russillo said.

Geckler also said two incidents cited by OSHA as evidence of persistent problems with the lifting system were not proof that the lifting system played a role in the L'Ambiance collapse.

A year earlier, at a project in Stamford, a slab dropped 14 inches and severed two fingers of a worker when the weld on a lifting angle broke, according to documents about the accident.

Geckler said the welding on lifting angles was improved after that accident and there were no signs of weld failure at L'Ambiance.

In February, workers at L'Ambiance mistakenly lifted four slabs at once instead of three slabs. They were not supposed to lift more than three at one time.

The mistake cracked a slab and damaged two lifting angles. OSHA has said that should have been a warning to Texstar that the lifting system was flawed.

But Geckler said the fact that the rods did not kick out under the load of four slabs showed the lifting system could withstand such heavy loads.

"Those two mistakes do not shake our confidence," Russillo said.

As for the bureau's scenario of rods kicking out, Geckler said rods would kick out when the load became too great under any scenario for the accident.

Frabill said that as a result, the bureau looked at the results of the collapse and not the cause.

As a result of their tests, bureau engineers said 236 lifting angles at L'Ambiance did not meet a safety factor that requires each lifting angle to be 2.5 times as strong as needed to lift the expected loads. OSHA then proposed a $10,000 fine for each lifting angle.

"The test wasn't done right," Russillo said. "They used a flawed test to set a safety factor."

L'Ambiance probe decried as incomplete

Official says cable check was faulty

By BRANT HOUSTON
and MIKE McGRAW
Courant Staff Writers

Federal officials failed to investigate thoroughly a possible design error in the concrete floor slabs at L'Ambiance Plaza that could have contributed to the building's collapse, a project subcontractor and sources familiar with the federal investigation say.

Chris Geckler, a vice president of Texstar Construction Corp., said Wednesday the layout of steel reinforcing cables in a critical area of the concrete slabs contained more errors than federal investigators noted in their public reports. Sources familiar with the investigation agreed with Geckler.

The Bridgeport apartment building collapsed April 23 while under construction, killing 28 people. Federal investigators have found Texstar most at fault.

Geckler said company officials also saw cracks in slabs in that area about three weeks before the collapse and told federal investigators about the cracks after it happened, but, he said, federal officials did not follow up on that information.

Charles G. Culver, who led the National Bureau of Standards investigation, could not be reached for comment Wednesday, but he has defended his report in recent months. Jan Kosko, a bureau spokeswoman, said Wednesday the bureau was most concerned with what initiated the collapse and that investigators had looked at the layout of the cables.

Although the report criticized the layout of the reinforcing cables, it did not find that layout

See Analysis, Page A11

Analysis of cables faulted

Continued from Page 1

positions contributed to the collapse.

The steel reinforcing cables, known as tendons, are installed before concrete is poured. The tendons are pulled tight after the concrete cures sufficiently. That kind of reinforcing is known as post-tensioning.

Post-tensioning is an efficient and economical way of reinforcing flat concrete slabs, engineers say, and is used instead of steel reinforcing bars. It also is supposed to help prevent cracking in the concrete.

But Geckler said a similar error was made in the area near the building's elevator shaft, where federal investigators believe the collapse began. He said his company now recently received drawings of the layouts file and the sources said they noticed that certain tendons were placed too high within the slabs.

Mario G. Salerno, an engineering consultant hired by federal officials to help study the layout, said in November that the federal investigation into cable layout positions did not go far enough but he did not provide specifics.

Somers said he argued with the bureau to do more analysis of post-tensioning details, but Culver said Somers did not present a persuasive case. Somers declined further comment this week.

An engineering consultant hired by The Courant said questions raised by Geckler and the sources are significant. The consultant, Amirsaleh Hamrahian of Reddinger Associates in New York, said further analysis should be done of the layouts now if they weaken the slabs and contributed to the accident.

An official of the U.S. Occupational Safety and Health Administration, which hired the bureau of standards to investigate the cause of the collapse, also said persistent questions about problems with the tendons should be explored.

"I still stand by Culver's report," said Jon Miles, regional OSHA administrator in New England.

Texstar, based in San Antonio, Texas, has been highly critical of federal reports issued last year that found Texstar most at fault for the collapse. OSHA fined Texstar $7.53 million for alleged safety violations at the site, which the company is contesting.

L'Ambiance Plaza was being constructed with the lift-slab method in which slabs are poured at ground level and then hoisted to their desired height by hydraulic jacks atop steel columns. Texstar was in charge of lifting the slabs.

The bureau engineers said the collapse probably began at or near the column closest to the elevator shaft in the building's west tower. Bureau engineers said it was a failure in Texstar's lifting system for the slabs — not the tendon problems — that probably initiated the collapse.

The layout of the tendons at L'Ambiance was done by Ferhoon Corp. of New York and reviewed by the structural engineer, O'Rourke & Co. of Atlanta. The bureau of standards said the layout of those at the top floor did not meet safety standards, and OSHA fined three companies. Five officials resign from company accused of trying to influence federal investigation. Page C3

$1,000 each.

I believe most of those engineers O'Rourke was not fired, although an engineer from the firm reviewed the layout and recommended changes.

I believe officials have declined to comment.

James A. O'Rourke, president of O'Rourke, said Wednesday there was no talk of redesigning the tendons running the width of the slab.

He said test slabs had been lifted without problems and that Geckler had never told his firm about the cracks Geckler said Wednesday he had told the general contractor and reported the general contractor to fell O'Rourke.

Geckler also said that several slabs each had a marks from the elevator shaft toward the nearby column where the tendons splayed.

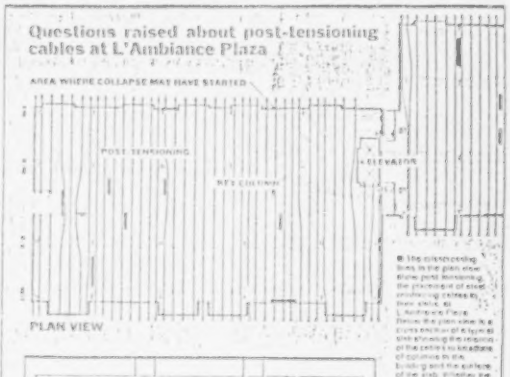
O'Rourke said Somers never presented any evidence of what was wrong with the post-tensioning.

Nonetheless Geckler said Texstar was worried about the structural layout — one that he had never seen before — and raised questions about it with structural engineers for the project before the collapse.

The bureau found that tendons in the west tower had split around a column near the elevator shaft at the center of the building.

"Tendons splayed like that would tend to pull a slab apart," Geckler said. "That can be overcome by additional reinforcing, and with the slab itself."

Themselves agreed that the splaying of the tend- on could create sideways forces that would tend to pull at least 10% of the slab and crushes it if the design did not compensate for the splaying.



Senator DODD. This committee will stand adjourned until further call of the Chair.

[Whereupon, at 5:13 p.m., the committee was adjourned.]

○

89-240 (168)